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RESPONSIBILITY FOR CHOOSING INTERNS AND INTERNSHIPS

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SAN FRANCISCO

This year the Commission on Graduate Education published its report,[1] in which the history, present illnesses and prognosis of internship and residencies were thoroughly reviewed. Here arguments for and against including a year of hospital service in the requirement for the degree of Doctor of Medicine were presented. However, two more aspects of the responsibility of medical schools toward the appointment of interns deserve study, since they apply not only to the fifth year problem but to present defects in the appointment of interns throughout the whole country.

Certain undesirable situations arise whenever the dean or the administrative office of a medical school is actively concerned with obtaining appointments for senior students. These bad effects are most strikingly seen when the fifth or intern year is required for graduation. There the school must intervene not merely to supervise the choice but actually to guarantee the placing of the student. If the dean or a faculty member or committee has to guide the student or even help him to secure an internship, the school to a greater or lesser degree must appear as a petitioner for favors from hospitals. Beggars cannot be choosers and certainly cannot be critics, so that the school or its representative must pass lightly over the defects of the institutions kind enough to accept the eight or ten students at the bottom of the class. Also, once the school has recommended a man for internship and has begun to count on placing its men in certain institutions, it will find reasons for not allowing any senior student to fail. To do so would put it in the position of reporting, a few weeks before the service begins, that Mr. X, recommended as a competent man in November, has failed to complete his fourth year. This would jeopardize the chance of placing men in that hospital in the future. Hence a distinct drop occurs in the work of the less diligent third or fourth of the senior class in schools where, because of custom or the fifth year rule, the student relies heavily on faculty help in securing his internship and preventing his failure.

It would be a decided tonic to the morale of medical students and of deans and committees on promotion if the school and its staff confined themselves to supplying students with a list of recommended internships and sending hospitals a record of scholastic accomplishment and relative class standing of each student who applied for internship. No personal recommendations should be supplied in an official way, and hospitals should demand personal interviews or reports from reliable and disinterested third parties, preferably practitioners in the community who were former interns or colleagues of men on the hospital staff. The whole responsibility for choice and attainment of internship should rest on the student, who should realize by the end of his second year that the sort of internship he may look forward to depends on his scholastic record and the good impression he makes on staff members of the hospital he hopes to enter.

There is another evil consequence of medical school solicitude over placing its students in hospitals which is also most apparent where the fifth year is required for graduation. This is the tendency to fill with its own graduates most of the positions in the services which the medical school controls and uses for instruction. This practice has a pernicious effect both on the interns and on the undergraduates. It may diminish the effective competition for positions and lessen the zeal of the best members of the class, to whom these positions normally go, since they have little to fear in the way of outside competition and their relative positions are pretty well determined by the third year. It surely lessens the drive and lowers the morale of the interns, who do not start off in a fresh environment among new associates, all anxious to establish a good record for themselves and for the school from which they come. Instead they run on in the same rut and with the same "gang." With the increasing participation of students in the life of the wards, clinics and operating room, the interns and residents have become even more important than the chiefs and staff members in molding the habits and attitudes of undergraduates. From the staff they pick up tricks of speech or of thought, but from the interns they absorb the working methods and the reactions to patients and to investigation which will determine most of their professional conduct. The selection of interns and residents with a view to getting the best possible men and having them work under conditions which will bring out their finest efforts and behavior is therefore the most important duty of the staff of a teaching hospital, not merely that the opportunity for graduate teaching should not be dissipated but in order to have undergraduates live in the best possible professional atmosphere. The necessity for selecting the best interns and for assembling a group trained in various schools and constantly on their toes is so urgent that it should not be weakened by pleas to absorb as many local graduates as possible and diminish the chore of placing an entire class. To win the gratitude of shy or backward seniors by helping them avoid the responsibility for finding hospital positions or moving into a strange environment, one must accept responsibility for lowering the whole level of graduate or undergraduate work.

The limitation of enrolment, the increase in laboratory and ward work and the emphasis on hours of

From the Stanford University School of Medicine.

1. Graduate Medical Education, University of Chicago Press, 1940.

credit rather than on learning have all contributed to slow down or stop entirely the free movement of medical students from one school to another. The changes of the last forty years have steadily diminished the differences between the work of the last two years of medical school and the first year of internship. Since there can be too much even of good things and since it is possible that "one good custom should corrupt the world," it is desirable that most students should not intern in the wards where they worked as juniors and seniors but should see new methods, hear new teachers and work with new companions. Any change in methods of appointment of interns which increases the movement of medical students from one center to another at this stage of their development is certain to raise the level of internship in hospitals having university connections, and gradually this will have an effect on all hospitals. Customs which increase inbreeding of the hospital staff and make circulation of young medical men more difficult are truly harmful.

The first responsibility of the universities is to improve the internships they control; they can do little to raise the quality of services without medical school contact except by example and certainly not by trying to control the work or make the intern year an undergraduate exercise. The fifth year problem might well be left in the hands of the licensing boards, since it certainly is better to have at least one year of postgraduate work before taking examination for licensure. It must be granted that the average medical graduate of today is far better equipped to practice than the men trained by lectures and recitations a generation ago; that there is really less need for internship before graduation than there was when the fifth year requirement was first imposed. It is proper to commend the wisdom of those licensing boards which insist on a fifth year, but the protection of the citizens should rest with these boards and not be left to the haphazard practice of medical schools, of which only thirteen now have this requirement. Forty-four per cent of the states but only 17 per cent of medical schools make internship mandatory.

The improvement of internships in hospitals without medical school connections can safely be left to the national societies, whose influence has already been so powerfully and effectively applied. Probably the most fruitful change the medical schools could put into effect would be to limit to one half or less of the total number that group of interns chosen from local graduates. Students should be encouraged to visit or do ward work in other hospitals during the summer after the junior year in order to have a better basis for evaluating and to pave the way toward securing an internship. There should also be a more uniform time for appointing interns, no *sub rosa* commitments before this date and a strict avoidance of "trading" between medical schools, so that there would be the least possible pressure to seek to obtain interns or internships by "deals." [2] It is desirable to give the maximum freedom of choice to the student seeking hospital appointment and to the hospital staff selecting men for internship. As long as the university attempts to guide or assist the student, this freedom of choice is restricted and the result is harmful to students and to medical schools.

2. In view of the importance of having the best possible intern services to establish the correct atmosphere in wards where undergraduates are being trained, it is desirable that these teaching services should have first choice of interns; this will benefit all hospitals by raising the level of undergraduate training. At present many excellent students who desire such services are lured away by other hospitals which offer the security of very early appointment. It is to be hoped that all the agencies concerned with better medical education will work out methods by which all hospital appointments will be offered on specified dates and that the first offers will be limited to teaching institutions. For example, if the hospitals' first choice of appointments were mailed November 15, the acceptances of the first group of interns could be received and the second choice appointments sent out by December 1 to men who had indicated they were still available; the third choice could be made by December 15. Under such a system the student would take the most desirable service open to him, and the hospital would get the staff which its reputation merited.

THE CARE OF THE PREMATURE INFANT

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Special studies have shown that at least 5 per cent of all infants born alive are born prematurely.[1] This means that more than 114,000 infants were born prematurely in 1938. In the same year more than 31,000 neonatal deaths were reported by the United States Bureau of the Census as directly due to premature birth. The neonatal mortality rate from this cause in 1938 was 13.8 per thousand live births. These figures indicate the importance of the problem at the present time.

The earliest recognition in this country of the role that premature birth plays in infant mortality appears to have been an address on infant mortality given before the American Medical Association in 1857 by Reese.[2] He stated: ". . . we include among the infant mortality all those recorded interments marked as stillborn and premature births, the extent of which, and especially their amazing increase, constitutes one of the most revolting and yet one of the most important features of our inquiry and one which cannot be contemplated without horror."

From 1857 to the turn of the century, reports with regard to premature infants dealt largely with the viability of these infants, including several reports [3] of survival of infants of less than six months' gestation, and of one weighing 1¾ pounds (794 Gm.) at birth.[4]

EARLY RECOGNITION OF CRITERIA OF CARE

Among the earliest papers dealing with methods of care of premature infants was one by Bartlett [5] in 1887. He referred to the types of incubators in use in Russia and in France and described his "water-jacket warming crib," made large enough to hold triplets! In the same year Taylor [6] reviewed foreign literature dealing with the care of premature infants and decried the custom of putting on "the usual clothing." He also discussed the relative merits of feeding premature infants by tube and with a spoon.

From the Children's Bureau, United States Department of Labor.

Read before the joint meeting of the Section on Obstetrics and Gynecology and the Section on Pediatrics at the Ninety-First Annual Session of the American Medical Association, New York, June 14, 1940.

1. U. S. Department of Labor, Children's Bureau: Causal Factors in Infant Mortality, Pub. 142, Washington, 1925, p. 72.

2. Reese, D. Meredith: Report on Infant Mortality in Large Cities, the Sources of Its Increase and Means for Its Diminution, Tr. A. M. A. **10**: 93-107, 1857.

3. Rodman, J.: Case of a Child Born Between the Fourth and Fifth Month, and Brought Up, Edinburgh M. & S. J. **11**: 455-458, 1815. Routh, C. F. H.: Case of Viability in a Child Born at Five and a Half Months, Tr. Obst. Soc. London **13**: 132, 1871. Kennedy, W.: Early Viability of the Fetus: An Extraordinary Case, South. J. M. Sc. **1**: 234-236, 1866.

4. Mursick, G. A.: Case of Delivery of a Child Weighing Only One Pound and Three Quarters, Am. J. M. Sc. **68**: 575, 1874.

5. Bartlett, J.: The Warming-Crib, Chicago M. J. & Exam. **54**: 449-454, 1887.

6. Taylor, W. H.: Some Points in Relation to Premature Children, Am. J. Obst. **20**: 1022-1028, 1887.

According to Ryan [7] in 1889 "the best food is, of course, the milk of the mother if she be healthy." Only one dissenting opinion was found, that of Adriance,[8] who contended that the mother's milk after premature labor is not suitable for premature infants because it has a higher protein content than that of milk of women whose labor is at term.

In 1890 Southwick [9] referred to an incubator first devised by Credé about 1850, describing it as "essentially a bath tub with hollow walls filled with hot water." He reported that this type of incubator was in use in the Boston Lying-In Hospital but added "I am informed that it fails to give perfect satisfaction. The heat comes too near the child without being diffused and the ventilation is defective."

Voorhees [10] in 1900 described the Lion incubator, a French type, and stated that it could be disinfected, that there was provision for ventilation, for moisture and for measurement of the moisture with a hygrometer, and for filtration of the air. He pointed out, moreover, that the infant was visible through glass doors and could be tended without removal from the incubator. All these points are stressed at present in discussing the proper conditions under which premature infants should be cared for in incubators.

From this brief review of the early literature of this subject it can be seen that the three criteria for care of the premature infant now considered fundamentally important were so recognized many years ago. Early efforts, like those of today, were directed toward keeping the infant warm, protecting him from infection and feeding him properly.

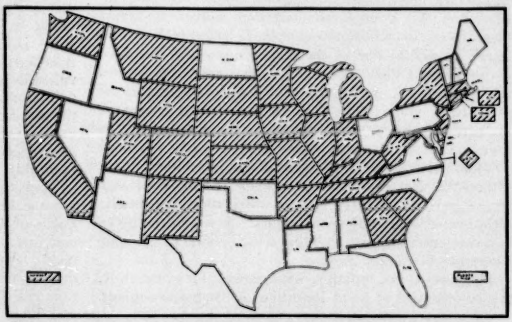
PROGRESS IN METHODS OF CARE

In the intervening years, progress has been made in developing methods for care of premature infants. Outstanding contributions are the improvement of incubators by the use of electrical heating devices, the development of air conditioning and air sterilizing, the use of parenteral fluid and blood transfusion, the use of oxygen to overcome asphyxia, and the development of individualized technics for care as a means of preventing infection. Exact assessment of certain methods of care, including feeding, is somewhat difficult, however, because studies designed to test them have not been controlled for such factors as birth weight, gestational age, race, sex and economic status. Furthermore, evaluation of one particular aspect of care, such as feeding, is complicated by the fact that the contribution of other factors to the welfare of the infant such as nursing care and environmental conditions cannot be separated from the effect of feeding.

It might be thought that the principle underlying the care of premature infants should be simulation, as far as practicable, of intra-uterine conditions, but this is obviously an impossible goal. It becomes our problem, then, to devise methods of care which serve to help the infant maintain his physiologic mechanisms independently in the presence of changing external conditions. This in turn calls for increased knowledge of the physiology of premature infants so that we may rationally determine the environment and the feeding which will be suitable for him with his limited powers of adaptation.

Maintenance of a constant body temperature depends on a balance between heat production and heat loss. The common nursery practice of wrapping a premature infant like a mummy may, it is true, prevent excessive loss of heat, but it is an effective means of preventing muscular movements which increase heat production. After all, the fetus in utero moves freely after the fifth month and is prepared to do so after birth.

Some type of heating device must be used in caring for premature infants to prevent loss of heat from the skin. A great variety of "incubators" have been produced in recent years, both commercially manufactured and home made. Definite advance has been made in their construction and operation, and clinical experience has proved their value in raising and maintaining the body temperature of the premature infant. It should be pointed out, however, that further progress in this direction depends on further knowledge of the optimal environment for premature infants of varying degrees of maturity, on the development of definite standards for construction and operation of incubators and on more exact clinical evaluation of their effect on the infant.



STATES IN WHICH THE STATE HEALTH DEPARTMENT HAS REPORTED TO THE UNITED STATES CHILDREN'S BUREAU SOME TYPE OF PROGRAM FOR CARE OF PREMATURE INFANTS DURING THE FISCAL YEAR 1939–40 (20 STATES, HAWAII, AND THE DISTRICT OF COLUMBIA), UNDER TITLE V, PART 1, SOCIAL SECURITY ACT.

Fig. 1.—States reporting some type of program for care of premature infants.

The fluid and caloric needs of the premature infant have been fairly well established. After the first week or two or until his manifestations of hunger become a guide, they can be met by the daily administration of approximately 150 cc. of fluid and 120 calories per kilogram of body weight (2½ ounces and 55 calories per pound).[11] During the first week of life the fluid and caloric requirements are less.

IMPORTANCE OF BREAST FEEDING

That human milk is the ideal food for the premature infant is almost universally accepted. The fact remains that long-standing clinical observations support this view. It should be pointed out, however, that pre-

7. Ryan, W. B.: The Treatment of Infants Born Prematurely, Indiana M. J. **8**: 246-251, 1889.
8. Adriance, V.: Premature Infants, Am. J. M. Sc. **121**: 410-421, 1901.
9. Southwick, G. R.: The Care of Weak or Prematurely Born Infants, New England M. Gaz. **25**: 310-313, 1890.
10. Voorhees, J. D.: The Care of Premature Babies in Incubators, Arch. Pediat. **17**: 331-346, 1900.
11. Gordon, Harry H.: Clinical Problems in the Newborn Infant, Connecticut M. J. **4**: 191-197 (April) 1940.

mature infants will thrive when fed suitable cow's milk mixtures, but in general the safest and most economical food for these infants is breast milk.

DIET OF THE LACTATING MOTHER

The quantity and quality of breast milk are dependent chiefly on the health and diet of the lactating woman, but there is good reason to believe that more effective efforts are being made to provide adequate diets for lactating cows than for lactating women.

Studies of diets of city and village families in relation to size of income and number in family have shown that in each income class the larger the family the fewer are the protective foods that are purchased.[12] Lactating women need these protective foods in larger amounts than nonlactating women. Human milk will obviously be deficient in certain elements unless special efforts are made to educate lactating women with regard to food purchases and to the use of protective foods (such as milk, tomatoes and citrus fruits, leafy green and yellow vegetables, and eggs). If for economic reasons it is not possible for lactating women to secure these foods in sufficient quantity to protect their own health as well as that of the infant, ways must be found to supplement their diets. It is, of course, well known that even if the nursing mother's diet is adequate the premature infant's food will need to be supplemented in certain respects, for example with vitamin D and iron, and probably with vitamins A, B_1 and C also.

Vitamin D should be given to the premature infant before the end of the second week of life in dosage larger, perhaps by three or four times, than that usually recommended for full-term infants. It should be given in a concentrated form and one which contains adequate amounts of vitamin A also.

The premature infant's requirement for vitamin C can be assumed to be at least that of the mature infant.

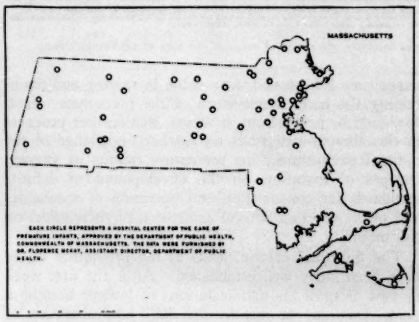

MASSACHUSETTS
EACH CIRCLE REPRESENTS A HOSPITAL CENTER FOR THE CARE OF PREMATURE INFANTS, APPROVED BY THE DEPARTMENT OF PUBLIC HEALTH, COMMONWEALTH OF MASSACHUSETTS. THE DATA WERE FURNISHED BY DR. FLORENCE BRYANT, ASSISTANT DIRECTOR, DEPARTMENT OF PUBLIC HEALTH.

Fig. 2.—Location of hospital centers for care of premature infants.

For the latter Smith[13] reports that "the recommended allowances fall within the comparatively narrow range of . . . from 20 to 50 mg. daily after the first few days." She quotes Ingalls' estimate that between 500 and 1,000 cc. of breast milk "of good quality" provides the equivalent of from 20 to 40 mg. of ascorbic acid daily. Since the premature infant can take but small amounts of breast milk and since often he receives breast milk from some woman other than his mother, or pooled breast milk which has been pasteurized or boiled, there will certainly be need for additional vitamin C. To meet the full requirement at least 40 cc. of orange juice would have to be given before the second week of life. Obviously vitamin C will have to be given to premature infants in concentrated form until they are able to take the required amount of orange juice.

Cowgill[14] suggests that the full-term newborn infant's optimal or, perhaps minimal requirement for vitamin B_1 is 80 international units a day. Even if the mother's diet is considered adequate in vitamin B_1 there is no assurance that her milk will provide adequate amounts of vitamin B_1 to meet the needs of the premature infant. Supplements of vitamin B_1 have been reported to affect favorably the premature infant's general condition.

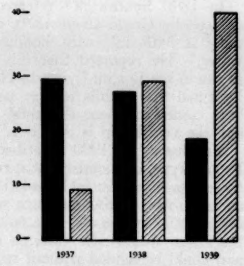


Fig. 3.—Infant deaths due to premature birth and infants cared for in incubators in Cattaraugus County, 1937-1939. Solid bar, infants dying from premature birth; shaded bar, infants cared for in incubators. Reproduced from page 26 of the 1939 Annual Report of the County Department of Health, Cattaraugus County, N. Y.

Many other needs of the infant handicapped by premature birth could be pointed out. Mention must be made of the fact that neither human nor cow's milk contains sufficient iron to meet the premature infant's need. Although it may not be possible to prevent the development of anemia in premature infants, the condition can be ameliorated by the administration of iron and later by the addition of iron-containing foods to the diet.

Recognition has been given to most of these dietary needs of the premature infant as well as the dosage and the age at which dietary supplements should be given. It is our responsibility to see that they are administered at the proper age in dosage and form suitable to the needs of premature infants and that they are made available to all premature infants.

There are other needs of premature infants about which less is known, for example the need for certain hormones, gland secretions and antibodies which are transmitted from mother to full-term infant. Attempts have been made to provide some of these substances to premature infants but the evidence presented as to their efficacy is unconvincing in many instances and further study is needed.

The burden of responsibility to supply knowledge with regard to well established methods of care of premature infants has been greatly increased in recent years because there has been greater demand for this knowledge and wider application of methods of care. Unfavorable social and economic conditions are also being recognized more widely as barriers to adequate care of premature infants in the home, and advice and assistance given by social workers and public health nurses are recognized as important factors in saving the lives of premature infants.

12. Stiebeling, H. K., and Coons, C. M.: Present Day Diets in the United States, in Food and Life, Yearbook of Agriculture, U. S. Department of Agriculture, 1939, p. 296.

13. Smith, Sybil L.: Vitamin C, in Food and Life, pp. 244-245.

14. Cowgill, George R.: Human Requirements for Vitamin B_1, in The Vitamins, Chicago, American Medical Association, 1939, pp. 240-241.

COMMUNITY PROGRAMS

In addition, standards for equipment and care of premature infants in hospitals and homes have been set up and the acceptance of them has extended. Last, but not least, community organization for care of premature infants has been developed on a wide scale in the last few years.

An example of a citywide plan for care of premature infants is that which has been in operation for about five years in Chicago. During this period the mortality rate from premature birth under 1 month has been lowered 31 per cent (from 13.7 to 9.4 per thousand live births).[15] State organization for care of premature infants has been developed widely during the past five years when funds have been available to the maternal and child health divisions of the state health departments under the terms of the Social Security Act, title V, part 1, administered by the Children's Bureau.

According to the most recent reports received by the Children's Bureau, twenty-eight states, the District of Columbia and Hawaii have already made or plan shortly to make special provisions for the care of premature infants as shown in the map (fig. 1). The plans vary in scope from a plan confined to one area, such as a rural county, or to one aspect of care such as provision of a warm bed, to a statewide plan such as that in progress in Massachusetts. In this state forty-eight centers for care of premature infants have been established in hospitals throughout the state, as shown in figure 2.

Some of the states include in their plans educational programs and the extension of medical and nursing services. In the development of these plans the steps usually taken by the state health departments have been first to study, often in cooperation with the state medical societies, the influence of prematurity on the infant mortality rate of their state and then to make a survey of existing provisions for the care of prematurely born infants in various parts of the state. The Social Security Act directs that rural areas and areas in special need shall receive particular attention, and most states have found existing provisions for care of premature infants in these areas very inadequate.

The educational programs have included the provision of special training in the care of premature infants for members of health department staffs, both medical and nursing, at such centers as the Sarah Morris Hospital in Chicago and the Lying-In Hospital in Boston. The staff member receiving the training, usually a supervising nurse, is thus enabled on her return to teach modern methods of care to the public health nurses of the health department and also to advise the nursing staffs of hospitals in a consultative capacity. Pediatricians on the staffs of state health departments have carried on educational programs for local health officers and have secured the interest and cooperation of practicing physicians in providing improved care for premature infants. Care of the premature infant has been discussed in postgraduate courses for physicians in a number of states. General educational programs have enlisted the interest of the public in providing better facilities for premature infants.

In addition to these educational efforts, which are of course basic to the success of any program, the state health departments have provided or extended the services of public health nurses. These nurses assist practicing physicians in caring for premature infants in their homes where necessary, and also teach members of the family the special methods of caring for the infant. State health departments in a number of states give assistance to administrators of hospitals in planning for better facilities for the care of premature infants and in teaching their nurses modern technics in this field. In a few states they have provided qualified pediatricians for consultative services to rural physicians.

That provision of special beds has been effective in favorably affecting the welfare of premature infants directly and indirectly is shown in the bar diagram (fig. 3) taken from the report of the Cattaraugus County Department of Health. It can be seen that in each of three years the number of beds increased and the mortality of premature infants decreased. Obviously there were other factors of improved care that accompanied the provision of beds.

As a result of these special programs, state and local, closer cooperation has been brought about between hospitals, practicing physicians, public health nurses and health and welfare departments. These services have already proved their worth in improving the chances for life of premature infants born at home.

From the annual reports of the Bureau of the Census the trend of mortality from premature birth under one month for the United States as a whole has been charted (fig. 4). It can be seen that the mortality rate decreased only 12 per cent in the twenty year period

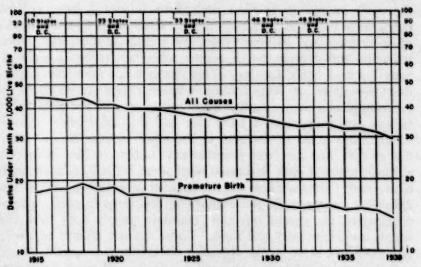


Fig. 4.—Trend of neonatal mortality from all causes and from premature birth, 1915-1938, United States expanding birth registration area. U. S. Department of Labor, Children's Bureau. Source, Reports of U. S. Bureau of the Census.

from 1915 to 1934; from 1935 to 1938, the latest year for which data are available, the rate decreased 7 per cent. It is encouraging to note this significant decrease in a short period of time and to know that the mortality rate for 1938 of 13.8 per thousand live births is the lowest ever recorded for the United States birth registration area.

SUMMARY

The importance of the problem of premature birth is shown by the fact that in 1938 there were more than 31,000 neonatal deaths reported by the U. S. Bureau of the Census as directly due to premature birth.

A review of the medical literature prior to 1890 shows that the importance of the criteria for care of premature infants now considered fundamental were recognized in these early years, namely to keep the infant warm, to protect him from infection and to feed him properly.

15. Bundesen, H. N.: Personal communication to the authors.

Progress has been made in the intervening years in developing methods of care in line with more complete understanding of the physiologic handicaps of premature birth.

Breast feeding is generally recognized as important for the welfare of the premature infant but insufficient attention has been paid to the importance of a proper diet for the lactating mother and to the infant, in addition to supplying certain dietary supplements in amounts adequate for his needs.

The care of the premature infant, previously considered only as it concerned the individual infant, has now developed into a community program. Under the provisions of the Social Security Act, title V (administered by the Children's Bureau), the division of maternal and child health of the state health departments of twenty-eight states, the District of Columbia and Hawaii have in progress or have made plans for more or less extensive programs for the care of premature infants, including educational programs, extension of medical and nursing care, and provision of incubators.

The mortality rate from premature birth under one month has shown a decrease of 7 per cent in the past two years. This reflects the improvement in the technic of care of the premature infant and the effect of extension of care to larger numbers of infants through community organization for this specialized service.

ABSTRACT OF DISCUSSION

DR. HARRY LOWENBURG Sr., Philadelphia: When pooled human milk obtained from the maternity ward is employed as the milk supply in feeding premature infants I have noticed every now and then that such infants develop an unusual degree of drowsiness and lethargy about the second or third day. This lethargy and drowsiness disappear when a change is made to some form of bottle feeding. This last fact has made me suspect that the more or less routine administration to mothers of pentobarbital sodium or other such agents may be the responsible factor, especially since I have also had this experience in individual cases when drowsiness in the infant developed and when the mother had received pentobarbital sodium. This is merely surmise which I have discussed with some Philadelphia obstetricians and I have come to no definite conclusion. It is not difficult to agree with the authors in reference to their recommendations to prevent infection, maintain proper body heat and supply sufficient food and fluid. These are not always so easily accomplished, however, as digestive disturbances frequently occur and thwart our efforts. Particularly is this so when insistence is placed on the early administration of concentrated vitamins. It would be profitable if the authors could go a little more into detail and tell us just how they accomplish all the objectives which they mention without disturbing the gastrointestinal tract; in other words, explain their technic.

DR. ETHEL C. DUNHAM, Washington, D. C.: I had hoped that I would not have to answer questions with regard to certain aspects of the care of premature infants about which considerable difference of opinion exists among physicians. Rather, I would emphasize the fact that a great mass of knowledge about such infants is available which is not being used as widely as it should be. Physicians should familiarize themselves with the well established methods of caring for premature infants, so that they can use their specialized knowledge when called on to guide community programs for the care of such infants. One reason for giving this paper is that, with the rapid spread of community programs for the care of premature infants, physicians in local areas all over the United States are being called on for advice with regard to such programs. It is certain that we know much more about the care of premature infants than we did in the past, and that we are putting much of this knowledge into use; but our responsibility is to see that more of this knowledge is given to the physicians who are carrying on these programs.

DIAGNOSTIC PITFALLS OF THE NASOPHARYNX

FREDERICK T. HILL, M.D.
WATERVILLE, MAINE

The Encyclopaedia Britannica defines diagnosis as "the process of identifying the disease by consideration of the history, symptoms, physical signs and examination in every way of the patient." All these factors are important and essential in making a correct diagnosis. In otolaryngology perhaps more reliance is placed on physical signs that are visual than in most other fields of medicine. In the majority of instances the final interpretation of the clinical picture depends on what is seen in the ear, nose, pharynx or larynx. The habit of wearing the head-mirror throughout working hours, so commonplace among otolaryngologists, is an unconscious acknowledgment of the importance of visual examination in this field.

In 1931, in a paper read before this section, I [1] tried to bring out the importance of visual control by direct inspection in performing an adenoidectomy. In a large series of cases in which operations had been previously performed by many different men, a sufficiently high percentage of unsatisfactory results were found to warrant considerable doubt as to the efficacy of many procedures carried out in the nasopharynx. That this ineffectiveness is not limited to the removal of adenoid tissue is obvious. It must be admitted that the diagnosis of nasopharyngeal disease is frequently missed and that many lesions in this region go unrecognized. Carmody, in a recent paper read before the American Academy of Ophthalmology and Otolaryngology, referred to the nasopharynx in the title as "almost unknown in otolaryngology." In searching for an explanation for this too universal error it would seem that the difficulties in easily and satisfactorily visualizing the region might be the answer. Without in any way depreciating the importance of the history and other diagnostic data, the main pitfalls in the diagnosis of nasopharyngeal disease might be considered as due to four causes:

1. Not looking.
2. Not seeing.
3. Not knowing what to look for.
4. Not interpreting correctly what is seen.

The nasopharynx, like the larynx, is not easily accessible to visual examination and, as a consequence, is not always accorded the thorough and complete inspection so essential to a correct diagnosis. Its situation behind the soft palate, out of the direct line of vision, and the occasional difficulties encountered in indirect examination may at times tempt the physician to neglect or to pass rather hurriedly over this phase of the examination. Yet this region is of vital importance in our specialty and often contains the clues to the correct solution of many clinical problems. The excuse "I could not get a good look at the nasopharynx" should never be permitted. No examination should ever be considered sufficient without a thorough inspection of this region.

From the Thayer Hospital.
Read before the Section on Laryngology, Otology and Rhinology at the Ninety-First Annual Session of the American Medical Association, New York, June 12, 1940.

1. Hill, F. T.: Observations Following Adenoidectomy, Arch. Otolaryng. **14**: 775-783 (Dec.) 1931.

This, of course, presupposes a routine examination with the postnasal mirror. Sometimes this is neither easy nor satisfactory. The patient may be uncooperative or possess a sensitive, gaggy throat, making it extremely difficult to obtain a satisfactory view of the entire vault. These difficulties usually may be overcome with patience and perseverance, together with a gentle technic and sometimes the use of a small amount of some local anesthetic sprayed in the throat. The postnasal mirror, however, has certain very definite limitations. There is often considerable variation in the countour of the nasopharynx. The anterior tubercle of the atlas may project forward like the prow of a ship with the lateral spaces flaring out behind, or there may be a concavity in the midline of the vault at the superior-posterior angle. It may be quite impossible to inspect these spaces thoroughly by means of the mirror. In addition there is necessarily more or less distortion of the image in any mirror held at a right angle to the object being examined, and this distortion may be further increased by the presence of mucus in the nasopharynx. Sole reliance should never be placed on the postnasal mirror unless the examination is thoroughly satisfactory and the appearance definite beyond all doubt.

The development of direct laryngoscopy, by means of the laryngeal speculum, marked a great advance in our conception of diseases of the larynx. Rarely today would one depend entirely on what is seen with the laryngeal mirror. Similarly in the nasopharynx some direct method of inspection should be employed in every doubtful case in which there is any question of any abnormal condition. I use the nasopharyngoscope almost as a routine, and it is surprising how often small but significant abnormalities can be noted which were not seen with the mirror. Unless prevented by marked septal deviation, the nasopharyngoscope should be passed through both sides of the nose so that the blind area directly ahead of the instrument can be included. In certain cases the pharyngoscope used through the mouth may be useful.

In the final analysis nothing is quite as satisfactory as direct inspection by elevation of the soft palate. Every otolaryngologist is familiar with the difference

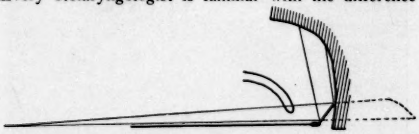


Fig. 1.—Schematic drawing of projection of image seen in the postnasal mirror. Distortion of posterior pharyngeal wall, which is viewed as if looking down a cylinder.

between the appearance of the larynx when seen with the mirror and when viewed through the direct laryngoscope. The same holds true in the nasopharynx and it is much simpler to do.

For years palpation has been an accepted method of examination of the nasopharynx. It is uncomfortable for the patient and is necessarily done so hurriedly that it is usually unsatisfactory to the examiner. Aside from determining the presence of adenoids or ascertaining the firmness of a tumor mass, it gives comparatively little information. I feel that in examining for adenoids, when the child is too young for the use of the mirror or the nasopharyngoscope, it is distinctly preferable to have the patient firmly wrapped in a blanket and to elevate the soft palate with a retractor. It does not disturb the child any more and gives the examiner more accurate information.

Some years ago Beck advocated retracting the soft palate by means of a rubber catheter passed through the nose. This is often very helpful in operative work but is hardly necessary for the purpose of examination. Yankauer devised a speculum which allows a very satisfactory inspection of the nasopharynx. Often a simple palate retractor will suffice. Usually a minimum amount of local anesthesia in the adult, to control gagging, is advisable. By this direct inspection, using either the speculum or a retractor, one can see the actual picture without distortion and can better interpret the conditions seen with the nasopharyngoscope or the mirror.

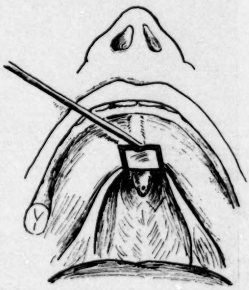


Fig. 2.—Direct view of cyst of pharyngeal bursa.

The roentgenogram may be a most useful and important adjunct to visual examination and should be employed in all cases of suspected malignancy. As pointed out by Furstenberg,[2] the presenting lesion in the nasopharynx may be so small as sometimes to escape detection, or it may be located in the eustachian tube itself; yet there may be considerable involvement of the base of the skull, which can be discovered by x-ray examination.

As common a pitfall as not accurately seeing the nasopharynx is not knowing what to look for. Too often the clinician is satisfied if he determines the presence or absence of adenoids. Hypertrophy of the posterior tips of the inferior turbinate or adhesions across the fossa of Rosenmüller or the eustachian orifice may explain the symptoms of a conduction deafness. Postnasal discharge may indicate a chronic posterior sinusitis. Choanal polypi or the more serious nasopharyngeal fibromas may result in marked nasal obstruction. New,[3] Furstenberg,[2] Hansel,[4] Heine[5] and others have called attention to the incidence of benign and malignant tumors in the nasopharynx. Furstenberg[6] has described tumors developing from the remnants of the hypophysial duct, which he classified as craniopharyngiomas. Ridpath[7] has reported chordomas arising from the fetal notochord. Yankauer[8] Dorrance,[9] Kully,[10] Woodward[11] and Eagle[12] have

2. Furstenberg, A. C.: Malignant Neoplasms of the Nasopharynx, Surg., Gynec. & Obst. **66**: 400-404 (Feb.) 1938.
3. New, G. B.: Syndrome of Malignant Tumors of the Nasopharynx, J. A. M. A. **79**: 10 (July 1) 1922.
4. Hansel, F. K.: Malignant Tumors of Nasopharynx, Tr. Am. Laryng. A. **53**: 72, 1931.
5. Heine, L. H.: Malignant Tumors of the Nasopharynx, Arch. Otolaryng. **22**: 51-61 (July) 1935.
6. Furstenberg, A. C.: A Clinical and Pathological Study of Tumors of the Nose, Pharynx and Mouth of Teratological Origin, Tr. Am. Laryng. A. **56**: 231-248, 1936.
7. Ridpath, R. F.: Chordoma: With Report of Two Cases, Tr. Am. Laryng. A. **60**: 255-267, 1938.
8. Yankauer, Sidney: Nosapharyngeal Abscess: Report of 155 Cases, Tr. Am. Acad. Ophth. & Otolaryng., 1929, pp. 364-375.
9. Dorrance, G. M.: The So-Called Pharyngeal Bursa in Man, Arch. Otolaryng. **13**: 187-224 (Feb.) 1931.
10. Kully, B. M.: Cysts and Retention Abscesses of Nasopharynx, Tr. Am. Laryng., Rhin. & Otol. Soc. **40**: 185-199, 1934.
11. Woodward, F. D.: Nasopharyngeal Abscesses and Cysts, Tr. Am. Laryng., Rhin. & Otol. **43**: 73-77, 1937.
12. Eagle, W. W.: Parygneal Bursae (Thornwalt's Bursae): Report of Sixty-Four Cases, Laryngoscope **49**: 199-207 (March) 1939.

reported numerous cases of nasopharyngeal cysts or bursae. Beck [13] refers to primary tuberculosis in this region. Congenital defects, such as atresia of the posterior choanae, are occasionally encountered. Suppuration of the petrous apex may point in the nasopharynx. If one keeps these possibilities in mind the

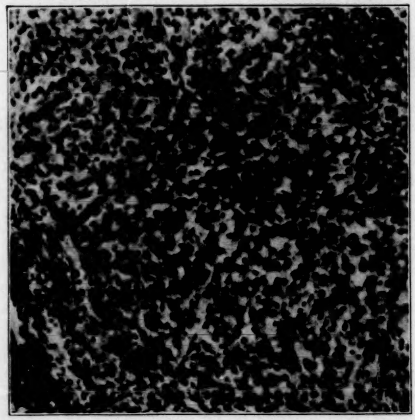


Fig. 3.—Section of lympho-epithelioma of nasopharynx; reduced from a photomicrograph with a magnification of 280 diameters.

pitfall of incorrect interpretation need not loom so large. Utilization of all other diagnostic data should solve the problem in the majority of cases.

Malignant tumors of the nasopharynx often manifest themselves first by what Hansel [4] refers to as extranasopharyngeal signs and symptoms, usually through involvement of the cranial nerves. New,[3] with his vast experience in these cases, has emphasized the diagnostic importance of diplopia, facial pain and disturbances in swallowing as early symptoms. While any of the cranial nerves may be affected, those most commonly involved are the sixth, fifth, ninth, tenth, eleventh and twelfth. Furstenberg [2] states that the presence of posterior cervical adenopathy, pain referred to the throat or ear and signs of a unilateral conduction deafness should excite the suspicion of a malignant growth of the nasopharynx. Involvement of the pterygoid muscles may result in trismus. Any patient with an unexplained cranial nerve involvement, with or without cervical adenopathy, should be most thoroughly investigated with the thought in mind of a possible malignant neoplasm of the nasopharynx.

A youth aged 17 was seen because of unilateral deafness. He had been under treatment elsewhere and had many inflations and a submucous resection of the septum performed. The posterior cervical nodes were palpable and he had some degree of trismus. Nasopharyngoscopy showed a mass of what appeared like adenoid tissue in the left fossa of Rosenmüller, impinging on the orifice of the eustachian tube. Histopathologic examination showed this to be a "lympho-epithelioma." While he did remarkably well for about two years under high voltage roentgen therapy, he subsequently died from extensive metastases.

A boy aged 14 years was seen in consultation because of marked cervical adenopathy. There was a history of repeated severe epistaxis necessitating packing of his nose during the preceding few months. Although the source of the bleeding was obviously in the nasopharynx, no consideration had been given to the possibility of a malignant growth. Biopsy showed the lesion to be an epidermoid carcinoma grade 3 and the patient was referred for high voltage roentgen therapy.

Yankauer's [8] report of 155 cases of nasopharyngeal abscess in 1929 revived interest in so-called Thornwaldt's disease. While not in entire agreement with Yankauer that these were retention abscesses in the recessus medius of a residual adenoid, a number of observers have reported sufficiently large series of cases to suggest that the presence of cysts in the nasopharynx is frequently overlooked. As stated by Kully,[10] there are probably two types: the retention cyst in a residual adenoid, such as described by Yankauer and which is easily opened with a probe, and the cyst, considered by Dorrance [9] as due to the persistence of an embryonal bursa, originating from adhesions of the notochord to pharyngeal ectoderm. The latter, when viewed by direct inspection, appears smooth, round, yellow or white and from 1 to 2 cm. in diameter. It may have a small opening in its center either exuding secretion or covered with a scab, or it may appear tense and fluctuant. A cutting instrument is required to open this. It contains thick gelatinous material which often shows a positive culture from streptococcus or staphylococcus. Its walls are smooth and shiny. Either type of these cysts may give rise to a postnasal discharge, cause a variety of symptoms affecting the ear or act as a focus of infection. As previously stated, they are frequently overlooked and are best diagnosed by direct inspection of the nasopharynx.

A woman aged 40 was referred by an ophthalmologist because of a persistent cyclitis. Her general physical examination was

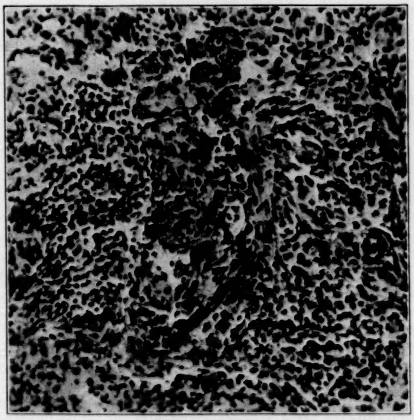


Fig. 4.—Section of epidermoid carcinoma of nasopharynx; reduced from a photomicrograph with a magnification of 350 diameters.

negative. Her tonsils had been removed. X-ray examination of the sinuses gave normal results. Examination of the nasopharynx showed a small cryptic bit of tissue directly behind the vomer, covered with a small scab. Marked improvement followed removal. This was a retention cyst in a small residual adenoid.

A man aged 27 complained of postnasal discharge, tinnitus and a feeling of stuffiness in the ears. His tonsils had been

13. Beck, J. C.: Applied Pathology in Diseases of Nose, Throat and Ear, St. Louis, C. V. Mosby Company, 1923, p. 170.

removed. His condition had been diagnosed as sinusitis and an antrum operation had been advised. X-ray examination of the sinuses gave normal results. Examination of the nasopharynx showed a round, symmetrical, pale tumor in the midline, somewhat tense and fluctuant, with a small opening in the lower portion. This was operated on under local anesthesia and the lining was destroyed by electrocoagulation. Following this his symptoms gradually subsided. This was a cyst of the pharyngeal bursa.

Such cases as these are far too common for one to view with any degree of complacency the frequency with which the diagnosis of nasopharyngeal disease is missed. While at times the correct diagnosis may present difficulties, the stage at which many of these cases are seen warrants the opinion that the greatest difficulty is due to hasty and incomplete examination and that greater care in this regard would eliminate many of these errors.

CONCLUSION

1. Most of the errors of diagnosis of nasopharyngeal disease are due to the otolaryngologist not accurately visualizing the nasopharynx and not keeping in mind the disease possibilities in this region.

2. Direct inspection of the nasopharynx by elevation of the soft palate is the most accurate and valuable method of examination of this region.

Professional Building.

FIBROMAS OF THE NASOPHARYNX

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ROCHESTER, MINN.

Juvenile basal fibromas of the nasopharynx comprise one of the most interesting groups of neoplasms encountered in the upper part of the respiratory tract. Their definite predilection for age and sex and their limited and comparatively inaccessible site of origin, extreme vascularity, tendency toward spontaneous regression and benign histologic structure, yet potential seriousness, render them unique among tumors of the nose and throat.

From Jan. 1, 1910, to Jan. 1, 1940, sixty-three patients having fibromas of the nasopharynx have been examined at the Mayo Clinic. In 1924 New and I[1] reported thirty-two of these cases seen between 1910 and 1923 inclusive. Thirty-one additional patients who had this condition have been encountered since 1923. The entire group of sixty-three cases includes only patients who had fibromas of the juvenile basal type. The group excludes choanal polyps, periosteal fibromas, fibrosarcomas and other forms of fibrous tumors.

Juvenile basal fibromas of the nasopharynx are rare; few reports in the literature present more than a half dozen cases seen by a single individual. A notable exception is the series of fifty-eight "nasopharyngeal fibromas" reported by Shaheen[2] in 1930. However, Shaheen said that he had encountered these tumors among boys 2, 4 and 7 years of age, also among men aged 48, 60 and 70 years. He noted also that he had not encountered spontaneous involution and disappearance of the neoplasm after the patient had reached the age of 25 years and that he had observed carcinomatous changes in these tumors. Such statements cast considerable doubt on the probability of all his cases belonging to this classification.

The tumors under consideration occur predominantly among male patients. Data concerning some of the patients encountered prior to 1919 are incomplete and because of this only forty-five cases seen since that date are reviewed in detail here.

The tumors present a definite life cycle and a characteristic clinical appearance. They arise most commonly in the vault or high on the posterior wall of the nasopharynx from the periosteum covering the basilar process of the occipital bone and the body of the sphenoid bone but they may spring from the anterior aspect of the upper two cervical vertebrae, the internal pterygoid plate, the region of the foramen lacerum and the pterygomaxillary fossa. The mucoperiosteum lining the sphenoid sinus is also said to be a possible site of origin for the condition. Certain it is that this sinus frequently is found to be involved by neoplasm early in the course of the disease. These fibromas appear at about the age of puberty or slightly earlier than this and continue to be active until the age of approximately 20 to 25 years, at which time they tend to regress spontaneously and in some instances disappear completely.

Fibromas of the nasopharynx usually appear as hard, often almost cartilaginous, rounded, slightly nodular or lobulated, deep red, purplish or grayish tumors occupying the upper portion of the nasopharynx and often extending into one or both nasal fossae as well. Their attachment is most frequently broad, sessile and firm, so that the mass is almost immovable. At times, and especially in the case of tumors of slow growth and long duration, there is a definite pedicle, and a freely movable mass can be seen below the palatal border. Multiple secondary attachments to the pharyngeal or nasal wall may be present following unsuccessful attempts at operative removal. The intranasal prolongations of the tumor may crowd the septum against the lateral wall and they may present in the anterior naris or even protrude from the nostril. Other extensions may invade the retromaxillary fossa, antrum, orbit, ethmoid sinuses, and the sphenoid sinus and even the cranial cavity. These prolongations are said to grow most intensively where they encounter the greatest obstacles. In several of our cases a tumor arising in the nasopharynx or pterygoid fossa was bulging the cheek lateral to the tuberosity. The tumor is covered with normal mucous membrane, and tortuous vessels often stand out prominently on the surfaces. This in itself is frequently a very striking clinical feature. Ulceration is not often seen except as a result of trauma or previous therapy.

The extent of these tumors varies greatly. Although they usually spring from some point of origin situated high on the posterior wall or the vault of the nasopharynx, in our experience comparatively few of them are limited to this cavity at the time the patient reports for examination. The inherent activity of the growth, together with the stimulation induced by repeated incomplete treatment previously carried out in the majority of these cases, unquestionably were factors in such extension beyond the aforementioned cavity. The nasopharynx was involved in all forty-five cases in this series which were studied in detail, but in only eleven

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From the Division of Laryngology, Oral and Plastic Surgery, the Mayo Clinic.

Read before the Section on Laryngology, Otology and Rhinology at the Ninety-First Annual Session of the American Medical Association, New York, June 12, 1940.

1. New, G. B., and Figi, F. A.: Treatment of Fibromas of the Nasopharynx: Report of Thirty-Two Cases, Am. J. Roentgenol. **12**: 340-342 (Oct.) 1924.

2. Shaheen, H. B.: Nasopharyngeal Fibroma, J. Laryng. & Otol. **45**: 259-264 (April) 1930.

cases were the tumors confined to this region alone. Both nasal fossae were involved in three cases, the left alone in eighteen instances and the right in thirteen.

Pressure of the expanding neoplasm often results in a remarkable degree of destruction of the bone with

Fig. 1.—Schematic representation of fibroma of the nasopharynx and nasal fossa, with sessile attachment in the vault of the nasopharynx. The pressure of the tumor mass has destroyed a considerable portion of the basilar process of the occipital bone and of the body of the sphenoid bone.

which it comes in contact. This osseous loss appears to be the result of pressure absorption. As a result of it the tumor is able to pass readily through narrow fissures such as the lacerated foramen and even to extend directly through the base of the cranial cavity. A fatal termination at times occurs as a result of this extension. This type of destruction of bone is seen not infrequently in association with other neoplasms situated elsewhere about the head. In fact, any slow-growing encapsulated mass of soft tissue developing in contact with a bony surface is likely to produce a concavity in the bone and may actually perforate it. This phenomenon often occurs in connection with mixed tumors of the hard palate and with dermoid cysts adjacent to the orbit (fig. 1).

In the series under consideration, symptoms had been present for from one month to six years at the time of examination of the patients in the clinic. Nasal obstruction was the first symptom noted by most of the patients, although epistaxis had occurred primarily in a few instances. The female patients ranged in age from 10 to 22 years and the appearance of symptoms dated from the ages of 7 to 16 years, having been present for from one and a half to six years and averaging four years for the series. The male patients were from 10 to 30 years of age. Symptoms among the male patients had first appeared at the age of 10 to 23 years and had been present for from one month to six years, averaging a little more than one and a half years in duration. Pain was not a prominent feature in any of the cases. Marked difference in the rate of growth of the tumor was noted in different cases. Some of them, especially among younger individuals, were growing so rapidly that they appeared clinically to be malignant. The tendency toward complete spontaneous regression following partial excision mentioned by Ewing,[3] who stated that this tendency also has been observed by Bensch, Grünwald, Konig, Bruns and Zarniko, was not encountered among the patients in this group.

Roentgenographic studies, particularly of the nasal accessory sinuses in these cases, often will furnish considerable information additional to that obtainable on physical examination alone and should be made whenever the indication presents. The tumor in the nasopharynx will as a rule be revealed best in lateral roentgenograms taken to show the upper part of the cervical region of the spinal column or the larynx. Pathologic processes are commonly present in the accessory sinuses in these cases and may be referable to direct invasion of the cavity by the neoplasm or to secondary inflammatory changes resulting from nasal obstruction and interference with drainage and ventilation (fig. 2).

Roentgenograms of the sinuses were made in forty of the forty-five cases in which detailed study was carried out. Results of these roentgenograms were negative in seven instances; the remaining thirty-three showed evidence of pathologic processes in the sinuses, nose, nasopharynx or orbit. The pathologic changes included the presence of a tumor mass in one or more of the sinuses or in the adjacent structures, diffuse

Fig. 2.—Lateral view of the upper part of the cervical portion of the spinal column, showing nasopharyngeal fibroma (indicated by arrow).

dulness of a single sinus, pansinusitis and, in a few instances, only thickened membrane. The sphenoid sinus was found to be involved in eight cases, the increased density being interpreted as a direct extension of the neoplasm in the vault of the nasopharynx. This observation always increased the hazard of treat-

3. Ewing, James: Neoplastic Diseases, ed. 3, Philadelphia, W. B. Saunders Company, 1928, pp. 180-182.

ment, which was invariably more protracted in these cases. The right antrum showed pathologic changes in twelve instances, the left in eighteen, although the antrums actually were invaded by the neoplasm in only seven cases. The ethmoid sinus presented roentgeno-

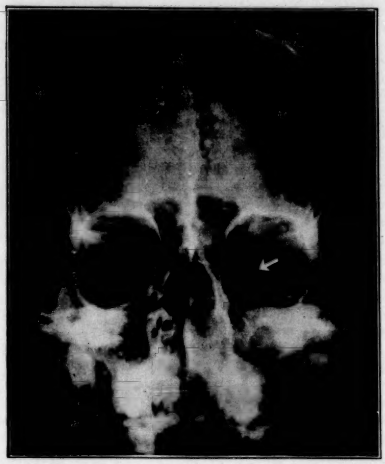

Fig. 3.—Anteroposterior view of the skull, showing enlargement of the right orbital fissure (indicated by arrow) resulting from a fibroma of the nasopharynx that was producing exophthalmos.

graphic evidence of involvement by the tumor in five cases and the basisphenoid bone, sella and orbit in one (fig. 3).

These tumors are primarily pure fibromas and microscopically consist of dense connective tissue. They are extremely vascular and the vessels are often cavernous in type. In addition, more or less inflammatory reaction is usually present, so that different portions of the tumor may contain inflammatory tissue, fibromyxoma or fibro-angioma. Friedberg [4] has recently suggested that these tumors be designated "vascular fibroma" or "angiofibroma" because of their histologic structure. The lack of muscle fibers in the walls of many of the large vessels and the fact that they are enclosed in dense fibrous tissue explain the profuse and persistent bleeding encountered in these cases. Cellular portions commonly are present in the tumors and often lead to a mistaken diagnosis of fibrosarcoma. Although deposits of calcium, cartilage and bone were said by Ewing to be rare, they have been reported in a number of instances. Ringertz [5] reported a case in which fibroma arose in the sphenoid sinus and in which the extent of the deposits of calcium led to a mistaken diagnosis of osteogenic sarcoma.

Generally speaking, biopsy should be made in all cases of neoplasm occurring about the upper part of the respiratory tract prior to the institution of treatment. Even though the diagnosis appears obvious on clinical examination, microscopic study may reveal the presence of a pathologic process entirely different from that suspected. Fibromas of the nasopharynx provide one of the few exceptions to this generalization. The laryngologist who has seen a few of these neoplasms can as a rule recognize them rather definitely on gross observation. However, in cases in which the tumor is growing actively, especially when it is recurring following previous treatment and when inflammation is present, the clinical picture often strongly simulates a malignant neoplasm and biopsy may be absolutely necessary for differentiation. The chief objection to removal of tissue for histopathologic study is the profuse bleeding that invariably ensues after such a procedure. At times this bleeding is difficult to control and, if positive recognition is possible without microscopic examination, biopsy should be avoided. In recent years at the clinic we have not taken tissue for microscopic study in many of these cases but have based the diagnosis on the individual history, the hardness of the tumor, the age of the patient and the clinical picture. Malignant change occurring in nasopharyngeal fibromas has been reported by some observers. This has not been definitely proved, however. It seems much more likely that in such cases a fibroma apparently activated by trauma, infection or some other cause was assumed to be a sarcoma, that a mistaken diagnosis of fibroma had been made in a lesion that was primarily malignant or that the histopathologic picture was misinterpreted (fig. 4 *a* and *b*).

Fig. 4.—Fibroma of the nasopharynx: *a*, the tumor from which this section was made occurred in a youth 18 years of age and had produced symptoms for only two months; *b*, the tumor from which this section was made occurred in a boy 16 years of age and had produced symptoms for one and a half years. Note the marked vascularity of both neoplasms.

In the literature many types of tumors appear to have been confused with fibromas of the nasopharynx; among these, myxomatous choanal polyps which had attained considerable size, and also periosteal fibromas, fibrosarcomas and various other types of malignant

4. Friedberg, S. A.: Vascular Fibroma of the Nasopharynx (Nasopharyngeal Fibroma), Arch. Otolaryng. **31**: 313-326 (Feb.) 1940.
5. Ringertz, Nils: Pathology of Malignant Tumors Arising in the Nasal and Paranasal Cavities and Maxilla: II. Benign Fibromatous Tumors in the Nasal and Paranasal Region and Maxilla, Acta oto-laryng. supp. **27**: 158-162, 1938.

neoplasms. Choanal polyps must be carefully distinguished, but they should cause little difficulty in this connection for they arise in the mucous membrane of the nose and accessory sinuses, most often the antrum, and are associated with inflammatory changes in the mucosa. They may, however, present in the nasopharynx as a mass of such size that their site of origin cannot be definitely determined clinically. They are usually lighter in color, much softer and less vascular than true nasopharyngeal fibromas and are freely movable, which is in decided contrast to the majority of juvenile basal fibromas. Moreover, removal of them presents a much less serious problem than does that of pharyngeal fibromas. Periosteal fibromas may be difficult to distinguish in their clinical appearance, but they show no predilection for age or sex as do the juvenile fibromas. They usually appear as firm, grayish red, sessile, nonulcerated immobile tumors within the nose or accessory sinuses, but they may develop externally about the superior maxillae or about the nose. They spring from the periosteum or the mucoperiosteum. They are less vascular than the nasopharyngeal fibromas and their cellular structure is more mature. Although they at times show much formation of new bone they must, as Ringertz pointed out, be distinguished from true osteofibromas, which are not infrequently encountered about the superior maxillae. Intranasally they may develop on the septum or the lateral wall. Chiari [6] reported a case in which a tumor of this type, arising in the ethmoid sinus, eroded the base of the skull and extended intracranially. This same complication apparently developed in a patient who had been examined in the Mayo Clinic and who received treatment at home. At the clinic we also encountered a tumor of this nature arising on the outer aspect of the nasal bridge in a child 4 months of age. A tumor had been present at birth and had been removed at the age of 1 month. At the time of removal of a recurrence of this neoplasm at the clinic when the patient was 15 months old the tumor measured 1 cm. in diameter. Tumors of this type were observed as being situated intranasally in two male patients aged 50 and 64 years, respectively; also in a woman 23 years of age, in two boys 13 and 19 years of age, respectively, and in several other patients. In the case of the man aged 64 the tumor had arisen within the antrum on the lateral wall, involved the nose, perforated the alveolus in the region of the tuberosity and bulged into the mouth at this point. Histopathologically it was a myxofibroma. No recurrence followed its removal with diathermy. These tumors often completely fill the antrum and by pressure absorption thin out the bony walls to the thickness of paper. In a number of instances they apparently have been reported as true nasopharyngeal fibromas. Some years ago I encountered a firm, dark red, fibrous tumor of the nasopharynx in a woman aged 60 who gave a history of nasal obstruction of two years' duration. The mass measured approximately 3 cm. in diameter and filled a large portion of the nasopharynx. On the basis of its clinical appearance it might well have been considered a true nasopharyngeal fibroma. On removal with electrocoagulation, however, it proved to be merely an extraordinarily large and firm hypertrophic tip of the inferior turbinated process.

Although fibromas of the nasopharynx tend to undergo spontaneous regression after the patient is from 20 to 25 years old, this tendency cannot be relied on sufficiently to justify delaying therapy in these cases. A fatal termination is an ever present possibility in this condition and active treatment always should be carried out.

The treatment of nasopharyngeal fibromas at the Mayo Clinic has undergone considerable change in the past twenty-five years. Prior to 1915 surgical procedures were resorted to almost exclusively at the clinic as well as elsewhere. Experience generally with such measures was a high mortality rate and frequent recurrence, necessitating repeated operations. Many of the procedures advocated were decidedly mutilating in effect, and uncontrollable hemorrhage was at times encountered. Kobylinski,[7] in a series of ten cases, reported three deaths caused by hemorrhage. Wojatschek [8] reported eight cases in which operation was performed by the transpalatal or transmaxillary route. Although he had no operative mortality, several patients had recurrences and one died subsequently of the disease. Experience at the Mayo Clinic with eight cases, in five of which surgical treatment was administered during the period of 1910 to 1915 inclusive, was no more satisfactory than this, which accounted for the change in our method of treatment.

From 1916 to Jan. 1, 1924, twenty-four patients suffering from fibromas of the nasopharynx were examined in the clinic. Twenty-three were treated with radium, the treatment being applied by three methods. In the first or early instances of the condition a T shaped lead applicator with a 50 mg. tube of radium in the trough of the T was held in various positions against the tumor in the nasopharynx. The original dose usually consisted of application of a 50 mg. tube for from ten to fifteen hours. It was difficult to apply the radium accurately in this manner, and severe reaction in the adjacent structures often occurred. In two cases the palate was perforated. Such complications were later prevented by protecting the posterior surface of the palate with a retractor made of 2 mm. of sheet lead covered with a rubber finger cot, and by more accurate dosage.

In the second group of cases steel points containing radon or radium element were inserted directly into the tumor, the number of points and dosage depending on the size of the mass. In the third group emanation seeds or radon points, first of glass and later of gold, were implanted. The value of the seeds ranged from 0.5 to 1 mc., the latter having since been found to be the more satisfactory. The number of points used depended on the extent of the tumor. This type of treatment, as well as the insertion of steel points, is still used in some cases, especially to supplement other therapeutic measures. The radium treatments were repeated at intervals of from two to three months, depending on the reaction observed and the result of previous therapy. Secondary applications usually were somewhat smaller than those used primarily.

Of the forty-five patients who had fibromas of the nasopharynx who were examined at the Mayo Clinic subsequent to the beginning of 1919, three patients did not stay for treatment. For the remainder, radium therapy or electrocoagulation, either alone or combined, was employed. Since the beginning of 1924 we have

6. Chiari, quoted by Ringertz.[5]

7. Kobylinski, quoted by Hellat, P.: Die sogenannten fibrösen Nasenrachenpolypen: Ort und Art ihrer Insertion und ihre Behandlung, Arch. f. Laryng. u. Rhin. **25**: 329-344, 1911.

8. Wojatschek, W.: Ueber Polypen der Schädelbasis, Ztschr. f. Hals-, Nasen- u. Ohrenh. **7**: 88-97, 1923.

used surgical diathermy with increasing frequency in the treatment of these tumors and in most instances it has been supplemented with radium. Of the forty-two patients treated, twenty-two received radium therapy alone, seventeen diathermy combined with radium, two electrocoagulation alone, and one roentgen therapy. The patients treated exclusively with radium received an average of six applications, counting implantation of radon points or steel points or the use of an applicator as separate from radium packs, even though this intranasal or intrapharyngeal therapy was used at the same time as external treatment. Steel points were implanted into the tumor in thirty-four cases and radon seeds in eleven. Radium tubes were applied directly in contact with the tumor in the nasopharynx by means of an applicator in sixteen cases. Radium packs were employed in eight. The one patient for whom roentgen therapy was used was hemophiliac. Among the patients in whom the tumor was treated with electrocoagulation primarily, an average of two applications of radium including the one used at the time of coagulation were given. Almost without exception, implantation of steel points or of radon seeds was used in these cases. The nineteen patients who were treated with electrocoagulation received only one application in twelve instances, two in five and three in two.

The length of time that patients were under treatment varied from two months to six and a half years among those for whom radium and diathermy were employed and from six months to four and a half years for those treated with radium. Two patients in the group in which electrocoagulation was used had unusually large and active tumors that proved to be very resistant to therapy. Both of these patients lived a considerable distance from the clinic and it was impossible for them to return at regular intervals. In addition, the sphenoid sinus was extensively involved in one of the patients and the antrum, cheek, pterygomaxillary fossa and orbit, as well as the nasopharynx and the nasal fossa, in the other. The former of these patients was under treatment for four and a half years, the latter for six and a half years. Following electrocoagulation and implantation of radium on one occasion in this latter patient, septic meningitis developed with loss of consciousness, hemiplegia and a polymorphonuclear cell count in the spinal fluid as high as 1,152. For some time it was thought that a fatal termination was inevitable, but the patient gradually recovered and with one subsequent insertion of radium the tumor entirely disappeared, leaving no residuum. It is questionable whether any other form of therapy would have eradicated the neoplasm in these two patients in a shorter period. With the exception of these two instances, the average length of time the patients receiving diathermy and radium combined were under treatment averaged ten months. Two patients for whom electrocoagulation alone was employed each were cured in four months. The patients receiving radium therapy alone were under treatment an average of 18.6 months. It seems certain, however, that the time required to eradicate these tumors with irradiation might have been shortened materially if the patients had been able to return at regular intervals for treatment. Implanted radium was more effective than radium applied to the surface of the tumor or externally in the form of radium packs.

Electrocoagulation often will entirely eradicate tumors of the type under consideration in a single sitting, a result which is rarely accomplished with radium, but electrocoagulation does involve a greater hazard than does irradiation. Profuse hemorrhage is frequently encountered when surgical diathermy is being used in these cases and in some instances hemorrhage is so active that it cannot be controlled by the coagulating process, and electrocoagulation cannot progress because of it. In a few such instances in this series it was necessary to discontinue electrocoagulation and to insert a firm pack into the anterior portion of the nares, and also postnasally, to stop the bleeding. In a few of these cases ligation of the external carotid artery was required on removal of the nasal pack a few days later or on separation of the slough at the end of from ten days to two weeks. In two instances treated early in the series perforation of the hard palate developed following the use of diathermy combined with radium. This complication might well have been obviated had an attempt not been made to eradicate these tumors in a single sitting. In fact, the end results in these cases have been equally satisfactory and fewer complications have been encountered when less intensive electrocoagulation and irradiation have been employed primarily and the treatment has been repeated on one or more occasions subsequently. Atrophy of the mucous membrane of the nose and nasopharynx occurs almost invariably following treatment of fibromas in these situations with either radium or surgical diathermy. Such atrophy is always more pronounced after irradiation, however, and the associated foul crusting frequently causes severe periodic hemorrhages later. The crusting and dryness of the mucosa incident to the atrophy can be controlled to a great extent and often entirely eliminated by increasing the patient's intake of fluids, by the daily administration of iodides and by the frequent use of a liquid petrolatum nose and throat spray. Although such atrophy does not result from avulsion or sharp excision of these tumors, the greater hazard of the latter procedures renders them inadvisable in many of these cases. Sancho and Ferrer [9] in 1929 reported five cases of nasopharyngeal fibroma in which the lesions ranged in size from that of a walnut to that sufficient to fill the nasopharynx and most of one nasal fossa; these tumors were removed by avulsion without mortality. The snare was introduced through the nostril. Although this procedure might have been carried out in a few of our cases, it would not have been feasible in the great majority of them because of the large size, multiple attachments, broad sessile base and extreme vascularity of the tumors. The possibility of engaging the majority of these tumors in a snare is wholly inconceivable; the fact that many of them were recurring following previous treatment unquestionably was an important factor in this. Villoria [10] has recently reported three cases of fibroma of the nasopharynx in which surgical removal was carried out through a Moure transmaxillonasal approach following preliminary laryngotomy. The surgical procedure was supplemented with irradiation.

In using surgical diathermy for fibromas of the nasopharynx and nasal fossae, the electrode usually is inserted through both the nostril and the mouth. A vulcanite nasal speculum is used when approach is made through the nose, in order to avoid injury to the nostril. For coagulation of that portion of the

9. Sancho, R. V., and Ferrer, E. A.: Estudio anatómico, clinico y terapéutico de los fibromas nasofaringeos, An. d. Hosp. de l. Santa Cruz y San Pablo **3**: 255-264 (Sept. 15) 1929.

10. Villoria, L. L.: Fibromas naso-faringeos (fibromas sangrantes de la pubertad masculina), Tipografia Americana, 1940.

tumor which is situated in the nasopharynx, the soft palate is retracted by means of a rubber catheter introduced through one nostril and brought out through the mouth. Additional protection to the soft palate is afforded by means of a flat piece of vulcanite or some other nonconductor threaded over one of these catheters and drawn back up between the posterior surface of the soft palate and the tumor. The electrode which is introduced through the mouth is insulated, except for a few millimeters at its tip, with a coat of duco cement or it is covered with a rubber catheter. The distal 2 or 2.5 cm. of this electrode is bent upward at a right angle to permit contact with the tumor (fig. 5). During the actual coagulation the point of the electrode and the tumor in the nasopharynx are observed by means of a nasopharyngeal mirror and an insulated suction tip is held adjacent to the region of electrocoagulation to remove blood, mucus and steam, to prevent excessive scalding of the normal tissue and to keep the mirror from fogging too rapidly. Intra-

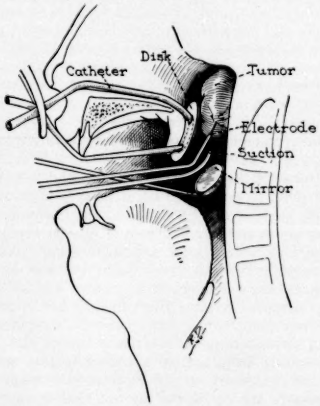

Fig. 5.—Technic of electrocoagulation of a nasopharyngeal fibroma: A rubber catheter introduced through the nostril and brought out through the mouth retracts the palate, thereby rendering the tumor more accessible, while a vulcanite disk threaded over the catheter protects the nasal surface of the palate. A suction tube is held adjacent to the point of the insulated electrode during electrocoagulation.

tracheal anesthesia usually is employed, the tracheal tube being introduced through the mouth. This permits of placing a gauze pack firmly in the hypopharynx so that the possibility of blood gravitating into the larynx and trachea is obviated. The portion of the tracheal tube which is situated in the pharynx tends partially to obstruct the surgeon's view of the nasopharynx, but this type of anesthesia is much safer in these cases than colonic or intravenous anesthesia. In the few instances in which it was impossible to make progress with electrocoagulation because of extreme vascularity, surgical diathermy was discontinued and radium points were inserted into the tumor.

The results of treatment of fibromas of the nasopharynx at the Mayo Clinic with radium and electrocoagulation either alone or combined have been very gratifying. There has been no mortality in these cases to date and all the patients who have received the therapy either have been cured or are well on their way to complete recovery. One patient, a boy, who came in three years prior to the time of this writing at the age of 13 years suffering from an extensive fibroma which involved the retromaxillary fossa, right side of the nose, nasopharynx, sphenoid sinus and orbit and which bulged the cheek, still presents increased density in roentgenograms of the sphenoid region. There is no clinical evidence of the neoplasm aside from this roentgenologic density, and the patient has no symptoms. Two patients in whom such tumors had almost disappeared at the time they were last observed nine and a half and thirteen years prior to the time of writing, respectively, have not been heard from since. It would seem likely that these patients have recovered. One patient for whom diathermy and radium were used on two occasions began to suffer from a recurrence fifteen months after the last treatment. Because of the great distance from the clinic at which this patient lived, he was unable to return but when last heard from apparently was progressing satisfactorily under radium therapy at home. Another patient who had received a single radium treatment wrote that a portion of the tumor was still present in the nasopharynx, but he did not mention symptoms associated with this condition. These results contrast strikingly with the experience of most laryngologists in dealing with tumors of this type by surgical measures.

It is interesting to note the age of these patients at the time of complete disappearance of their nasopharyngeal fibromas. Actually this point is the crux in determining the efficacy of therapeutic measures in these cases, since the tumors tend to undergo spontaneous regression after the patient reaches the age of approximately 25 years. Five of the patients had attained the age of from 20 to 24 years at the time treatment with radium was commenced, whereas eight in this group of twenty-two patients treated in this manner were 20 years or more of age at the time of complete disappearance of the tumor. Only one patient of the twenty-two was more than 25 years of age when cured; this patient was 24 years old at the time treatment was started and 26 years when cured. Among nineteen patients treated with electrocoagulation and radium, three were from 21 to 25 years of age at the time this procedure was initiated. Five patients (26 per cent) in the group had attained the age of 20 to 25 years at the time of complete disappearance of the tumor; 73 per cent were less than 20 years of age; 63 per cent of those treated exclusively with radium were less than 20 years of age when cured.

Although these tumors are benign, the improvement in the patient's general health that commonly follows eradication of the mass is often as striking as that noted after removal of a large infected malignant neoplasm. A gain in weight of from 15 to 20 pounds (7 to 9 Kg.) within the course of a few months is not unusual. One girl in this series, 14 years of age, gained 35 pounds (16 Kg.) in four months. Frequently a similar period of time will result in the patient's being transformed from an asthenic, pale, anemic individual into a robust person of normal vigor and vitality. The change of course occurs more promptly if the tumor is eradicated with a minimal loss of blood, but it has been seen in cases in which severe hemorrhage occurred postoperatively. It is accounted for by control of the frequent hemorrhages to which the patients have been subject, clearing the foul, fetid nasal discharge and recession of the associated inflammatory process and restoration of the nasal airway and of the patient's appetite.

SUMMARY AND CONCLUSIONS

Sixty-three cases of juvenile basal fibroma of the nasopharynx observed at the Mayo Clinic were studied. Fifty-eight of the tumors occurred in male patients; five were present in female patients. The patients ranged in age from 10 to 31 years at the time of examination. The nasopharynx was involved in all the forty-five cases studied in detail, the nasal fossae in thirty-four. The antrum, sphenoid and other accessory sinuses were invaded in a number of instances. Removal of tissue from these tumors is always attended by profuse bleeding and in some of the more recent instances of the condition biopsy was not performed, the diagnosis being based on the history, the age of the patient, the hardness of the tumor and the characteristic clinical picture. Surgical removal of these tumors involves considerable risk, and recurrences are frequent. Implants of radium and electrocoagulation supplemented with radium are the most effective forms of treatment in these cases. By means of electrocoagulation and insertion of radium a tumor of this type can at times be eradicated with a single application, but fewer complications are likely to be encountered if treatment is carried out in stages. There was no mortality in the series. All the patients who received complete therapy are now well except for a boy, 16 years of age, who is still under treatment at the time of writing.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. FIGI AND HILL

DR. JOSEPH D. KELLY, New York: Examination of the nasopharynx is not easy at the best; however, it must be done in all questionable cases. I do not believe there is any one method of examination which can be considered complete. Dr. Hill seems to think that we have overlooked the possibilities of the Yankauer boot. The use of the Yankauer boot is not easy and the field of vision is limited. It is necessary to anesthetize the pharynx and nasopharynx, and even then, in sensitive patients, retching is not obviated. The Yankauer is an excellent instrument for the examination of localized areas, such as the fossa of Rosenmüller and the posterosuperior lateral pharyngeal wall. The palate retractor alone gives a fair view of the lower half of the posterior nasopharynx, and this instrument, with a good sized nasopharyngeal mirror, is an excellent procedure. But let us not lose sight of the nasopharyngoscope. I think one should have two sizes to accommodate the large or the small nose or the noses of patients having nasal obstruction. The use of the nasopharyngoscope is simple and gives a fund of information with the least discomfort to the patient. Also one may treat the nasopharynx with the aid of the nasopharyngoscope more readily than by any other method. Aside from the methods of examination, the most important thing is the knowledge and experience of the examiner. If the examiner does not recognize the normal he will not appreciate the abnormal, and the examination is useless. I think that we will all agree that we do not have to fear the specialist who says "I don't know," but we must give a wide berth to the fellow who thinks he knows and does not know. Dr. Figi is to be congratulated on giving us a most complete paper and the data on one of the largest, if not the largest, series of nasofibromas of the nasopharynx, and he has brought out very definitely the characteristics of these tumors, such as the fact that they predominate in male patients —twelve males to one female. The main impression that Dr. Figi leaves is that the surgical treatment of nasofibromas is something of the past and that the safest way and surest way of effecting a cure is a combination of radium and electrocoagulation.

DR. CHARLES J. IMPERATORI, New York: Among the methods stated by Dr. Hill, he included that of palpation of the nasopharynx. Definitely, that is a most important method but most of the time we use our nail and not the ball of the finger. Just recall how you examine the nasopharynx. The index finger is placed in the nasopharynx with the ball of the finger anteriorly and the nail in contact with the pharyngeal wall. Instead, turn your finger around and apply the ball of the finger. The Hassinger or modification of a White palate retractor, I have found, is an extraordinarily good instrument in the examination of the nasopharynx but the Coakley tonsil probe will give almost as much information. The use of a Frankel tongue depressor and a tilting mirror, a No. 2 or No. 3, will give a great degree of information. Most patients can be examined by this method, possibly 60 per cent. With the other 40 per cent, one must use the nasopharyngoscope. There are many men who never use the tilting mirror or postnasal mirror but depend entirely on the use of the nasopharyngoscope. The use of the Hayes pharyngoscope or the modification of the Hayes-Beck instrument introduced into the mouth gives one a great degree of information in the nasopharynx. Then there is the method that I have designated as anteroposterior rhinoscopy, which consists of looking through the nose, into the pharynx, after having shrunken the tissues. That should be a routine practice in the examination by all otolaryngologists, especially at the first examination. This procedure is attained only by understanding how to focus the head mirror. The cone of light must be focused on the pharyngeal mucosa. One assists oneself somewhat by having the patient say "H," in other words raise the soft palate, and frequently one can see a light reflex, depending, of course, entirely on the amount of shrinkage that has occurred. I use a shrinking solution containing 1 per cent cocaine and 1:5,000 epinephrine. The use of lateral roentgenograms and this new method of laminography I think is going to help a great deal in outlining tumors in the nasopharynx. To discuss Dr. Figi's paper is almost like bringing coals to Newcastle. A report of forty-five case histories represents a very large experience in this particular condition. Definitely he has pointed out that there are two methods of arriving at the diagnosis: the clinical history and the physical examination. The clinical history usually is as follows: a male at puberty, disturbance of the hearing and nasal obstruction, disturbance of nutrition, loss of appetite, spontaneous epistaxis and frequently the appearance of considerable loss of mentality because of the interference with breathing and the blocking of the posterior choana. In the method of arriving at the diagnosis, the new growth is determined by physical means entirely and not by biopsy.

DR. GORDON B. NEW, Rochester, Minn.: Dr. Hill has done an excellent job in calling to our attention the necessity of a careful examination of the nasopharynx. Of all the lesions seen in this region, the malignant ones seem to be of most importance from a diagnostic standpoint. Eighteen years ago before this section I reported seventy-nine cases of malignant tumors of the nasopharynx examined in the previous six years, bringing out the fact that the symptoms these tumors present are not generally known and that the percentage of these tumors which produce symptoms referable to the nose and throat is comparatively small. Since then, from 1922 to 1936 inclusive, we have seen at the Mayo Clinic approximately 500 malignant tumors of the nasopharynx and during this period have been further impressed with the necessity for a careful examination in this region and the fact that many indeterminate diagnoses are cleared up by the finding of a malignant tumor. Of the seventy-nine cases reported in 1922 there were twenty-one presenting symptoms referable to the eye, twenty-nine referable to the ear, thirty-eight referable to the nose and pharynx, fifty-one referable to the glands of the neck, four referable to involvement of the gasserian ganglion, two referable to involvement of the jugular foramen and the nerves that pass through it, and eleven symptoms referable to intracranial involvement. Patients with malignant lesions of the nasopharynx frequently consult the ophthalmologist on account of external rectus palsy or ptosis, the neurologist on account of pain in the fifth nerve or the symptoms of intracranial involvement, the otologist on account of pain in the ear or discharge, the medical consultant regarding the presence of a gland in the neck of an indeterminate origin, or the dentist on account of the possibility of a wisdom tooth being a factor in the pain. It is possible in patients with pain in the face and ear or involvement of one or many of the cranial nerves to clear up an indeterminate diagnosis by finding a small

epithelioma of the nasopharynx. The results of treatment in these cases are much better than is generally thought. Radiation used externally and directly into the nasopharynx is the best method of treatment, and some patients are alive and well five and ten years following treatment. Dr. Figi has reported results of treatment of sixty-three patients with fibromas of the nasopharynx. As he has outlined, the use of surgical diathermy and radium gets these patients well with the least risk. In the treatment of most tumors it is essential that the tumor be entirely removed at one time. In the treatment of this particular type of tumor, that is a fibroma, the best results are obtained with the least risk by removing them in stages.

DR. E. P. FOWLER JR., New York: I didn't intend to discuss this paper, but since Dr. Kelly gave me credit for some one else's case I thought I ought to straighten the matter out. The case described was Dr. Morris Heller's. He was responsible for the successful diagnosis; I merely observed the case. I should like to ask Dr. Figi whether he uses only inhalation anesthesia for these cases, whether he is afraid of explosions from his diathermy and whether he ever uses intravenous anesthesia. I should like to leave two thoughts that were given to us by Dr. Coakley when he was discussing nasopharyngeal pathology with his interns. Dr. Coakley suggested that a probe be placed in the nose and the distance to the nasopharynx measured. If it is deeper on one side than the other, or something can be pushed around, one can be pretty sure of a tumor. Another dictum was "Always do a biopsy on a unilateral adenoid."

DR. FREDERICK T. HILL, Waterville, Maine: I will agree, of course, with Dr. Kelly. I tried to bring it out in the paper that all methods of examination should be used to arrive at a diagnosis; that one method would help the other in visualizing the region. It is so difficult to get a complete view of the nasopharynx that every method which will bring into view any part of the nasopharynx should be utilized, forming something of a composite picture. I am glad he mentioned the two sizes of nasopharyngoscopes. They are very useful. With any tumor in the neck one should keep in mind the possibility of a malignant nasopharyngeal growth. It is somewhat unfortunate that, at least with these Schmincke tumors in the nasopharynx, we may get what seems for a time to be satisfactory results but most of them go bad in about two years. Dr. Imperatori mentioned palpation. In my paper, which I didn't have time to read in full, I referred to palpation as a method of diagnosis. While we use it, it tells us comparatively little beyond the firmness of the tumor mass. I feel that it is advisable in examining a young infant for the presence of adenoids to retract the soft palate. It gives us more information. There is one thing about the shrinking of the nose for anterior examination. Cocaine and epinephrine are used in a rather routine manner, but once in a while we have a patient who has quite an idiosyncrasy to epinephrine and it may prove quite unpleasant. After it was used on my own nose, and I sneezed steadily for days, I discontinued using epinephrine. I think it is a great privilege to have Dr. New come into this discussion with his experience of 500 cases of tumor of the pharynx.

DR. FREDERICK A. FIGI, Rochester, Minn.: The discussers have been very generous. Answering Dr. Kelly's question concerning the opportune time for using radium in these cases, we usually insert radium needles or gold radon points immediately following the electrocoagulation, although they may be employed at any time either preceding or following the operation. As a rule it is necessary to use radium on one or more occasions following the initial application. Concerning the anesthesia that Dr. Fowler inquires about, intratracheal, ether, nitrous oxide and carbon dioxide are usually employed. The patient is anesthetized primarily with nitrous oxide and ether and is carried largely with a combination of nitrous oxide and carbon dioxide. During actual electrocoagulation the ether must, of course, be discontinued. There is apparently little danger of an explosion if the ether is discontinued, the gauze pack in the hypopharynx changed, the patient permitted to take a few deep breaths and the gas machine flushed with carbon dioxide before electrocoagulation is proceeded with. Intravenous sodium pentothal has been employed in a few instances.

CUTANEOUS MANIFESTATION FROM TOBACCO

WITH SPECIAL REFERENCE TO ARSENICAL EXFOLIATIVE DERMATITIS

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DANVILLE, VA.

My purpose in this paper is to call attention to another possible source of arsenic poisoning, namely tobacco. All of the tobacco on the American market contains arsenic in a form which may be taken up by the human body.

For years farmers have been using lead arsenate as an insecticide on tobacco to kill the horn worm. Nothing is done during the agricultural or manufacturing process to remove it. Probably nothing can be done.

Usually when any worker attempts to tie up a manufacturing process in which large amounts of money are involved with human diseases, a great furor is raised. This is not my intention.

Lead arsenate is essential to the tobacco industry. It should be considered as an industrial hazard. Farmers use it as an insecticide because it is the most efficient and inexpensive one available. Indeed, its efficiency is probably responsible for the fact that it remains on the tobacco when it reaches the consumer. It has the property of sticking to the tobacco. This is the reason why it is so effective. Remaining on it throughout, it kills the young worms as they are hatched. It is impossible to wash it off because in so doing the tobacco would be ruined. There is no chemical process known that will remove it.

For the past several years the United States Department of Agriculture has not recommended lead arsenate as an insecticide. Instead it recommends a preparation called cryolite. Farmers will not use this, first, because it is a little more expensive and, second, because it is much more difficult to use. It has to be applied to each individual plant. On the other hand, lead arsenate is effective in the hands of inexperienced labor. In fact, if it is thrown up in the air and blown across the field it will do just as well.

Remington[1] in 1927 reported that tobacco contained arsenic. He also stated that "the habitual user of tobacco is in daily contact with appreciable amounts of arsenic" and concluded that "the possibility of chronic arsenic poisoning from the use of tobacco is not to be dismissed without more evidence." Gross and Nelson,[2] of the United States Department of Agriculture, reported in 1934 that tobacco smoke contained arsenic. Drs. C. N. Myers and Binford Throne concluded from their work that arsenic was a factor of great importance in about 30 per cent of cases of eczema. They attributed the arsenic to the increased use of arsenate spray for the destruction of insects.

Consumers Research in 1938 analyzed five brands of cigarets and reported the arsenic content to be too high for safety to the heavy smoker.

The United States Pure Food Laws allow only 1.43 parts per million for arsenic. Zeidler and Wagner

Miss Louise Jakeman, Miss Margaret Tatum and Dr. C. W. Purcell, of Danville, Va., gave valuable aid and suggestions in this experiment.

Read before the Section on Dermatology and Syphilology at the Ninety-First Annual Session of the American Medical Association, New York, June 14, 1940.

1. Remington, R. E.: J. Am. Chem. Soc. **49**: 1410, 1927.
2. Gross, C. R., and Nelson, O. A.: Am. J. Pub. Health **24**: 36 (Jan.) 1934.

reported in 1937 that the arsenic content of tobacco was fifty times that allowed in foods.

It is only fair to note that no user of tobacco could possibly consume all the arsenic present. The spray is frequently used on vegetables and fruits, but they are usually washed before eating. The average person's diet does not consist of these entirely, but the user of tobacco is in constant contact with arsenic.

This paper will present an analysis of cigarets, cigars, snuff, chewing tobacco and smoking tobacco, purchased on the open market, and show that they all contain arsenic. It will also demonstrate that cigaret smoke contains arsenic in a form which may be taken up by the human body. It will present a series of cases of arsenical exfoliative dermatitis believed to be due to tobacco. A series of control cases will also be presented. It will attempt to show that the arsenic in tobacco has a very detrimental effect on the patient under anti-syphilitic treatment who happens to get a postarsphenamine dermatitis.

PROCEDURE

The Gutzeit test for arsenic has been used entirely in this experiment. The blood determinations have been made on 5 cc. of citrated blood. The tobacco tested that did not contain arsenic was obtained from a farmer who was known not to have used lead arsenate on his crop.

"Bakers analyzed" chemicals with a low arsenic content have been used throughout. Also control tests with the chemicals have been made on each analysis.

Figure 1 is the diagram of a mechanical smoker used for the determination of arsenic in cigaret smoke. It consists simply of two large test tubes connected by glass and rubber tubing and attached to a suction apparatus. A cigaret holder in one end was used to hold the cigaret that was being smoked. Distilled water was used as a solvent in both tubes. The water was analyzed for arsenic after ten, twenty, thirty and forty cigarets of each of the five brands tested had been smoked. It is of importance to note here that the figures obtained from the analysis for arsenic from the mechanical smoker would not necessarily apply to the human being. The mechanical smoker smoked each cigaret continuously. The human being does not do this.

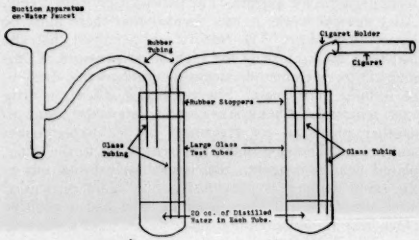

Fig. 1.—Diagram of mechanical smoker used to show that cigaret smoke contains arsenic: The suction apparatus is turned on. The cigaret is then placed in the holder and lighted. The smoke is allowed to bubble through the distilled water in both tubes. The distilled water is analyzed for arsenic after ten, twenty, thirty and forty cigarets of each of the five brands tested have been smoked.

RESULTS OF TOBACCO ANALYSIS

Table 1 shows the amount of arsenic found in the various types of tobacco. A control test was made on tobacco obtained from a farmer who had used no insecticide. It was negative for arsenic.

The arsenic content of the five brands of cigarets tested was practically the same. One cigaret might show more arsenic than another but when the average is taken the figures are more or less constant.

In discussing this matter of arsenic with various research chemists of the tobacco companies I find that they have known for years that tobacco contained arsenic. They have more accurate analysis than I have, but they tell me that these figures are approximately correct. They also say that lead arsenate is more or less used throughout where American tobacco is raised. I was told by one chemist that Turkish tobacco could be washed, which cannot be done with the domestic weed.

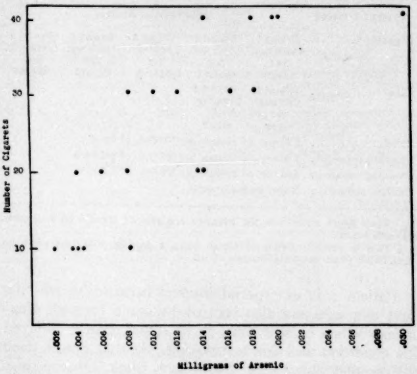

Fig. 2.—Graph showing that arsenic content of distilled water of the mechanical smoker is in proportion to the number of cigarets smoked.

Table 2 shows the amount of arsenic found in the distilled water of the mechanical smoker after it had smoked ten, twenty, thirty and forty cigarets of each of the five brands tested. The analysis of the smoke from twenty cigarets of brand 2 was checked by Dr. W. E. Bray of the University of Virginia, who reported 0.0112 mg. of arsenic. The smoke from twenty cigarets made of tobacco on which no lead arsenate had been used was negative for arsenic.

Figure 2 shows that the arsenic content of the distilled water of the mechanical smoker increased in proportion to the number of cigarets smoked. All these figures are probably higher than the actual amount of arsenic consumed by the smoker. It is reasonable to conclude that the more one smokes the more arsenic one's body takes up. The distilled water was purposely used as a solvent in the mechanical smoker because it is the simplest one available.

CASES OF ARSENICAL DERMATITIS

Table 3 is a summary of the cases of arsenical dermatitis thought to be due to tobacco. Because of the lack of space these cases cannot be reported in detail, so only the pertinent facts in relation to each will be mentioned.

All of these cases showed either a positive blood or urine arsenic. Clinically, it can be said that the dermatitis could have been due to arsenic. In none of them was it possible to determine any source of arsenic other than tobacco. In some of these cases intravenous injections of calcium thiosulfate, along with mild sooth-

ing ointments and baths, were used, which is believed not to have had an appreciable effect. All the patients were emphatically cautioned against the use of tobacco and they recovered and have remained so since. Three of them have had mild recurrences every time they used tobacco.

TABLE 1.—*Amount of Arsenic in Tobacco*

Type of Tobacco	Milligrams of Arsenic				
Cigarets*.....	Brand 1 0.0426 mg. per cigaret	Brand 2 0.0465 mg. per cigaret	Brand 3 0.0420 mg. per cigaret	Brand 4 0.0365 mg. per cigaret	Brand 5 0.0495 mg. per cigaret
Cigars.....	Brand 1 0.08 mg. per cigar	Brand 2 0.088 mg. per cigar			
Snuff.....	2.60 mg. of arsenic per 100 Gm. of snuff				
Chewing tobacco..	1.60 mg. of arsenic per 100 Gm. of tobacco				
Smoking tobacco..	4.00 mg. of arsenic per 100 Gm. of tobacco				
Control tobacco†..	Negative for arsenic				

* Each figure represents the average analysis of from 5 to 8 cigarets on each brand.

† This is cured tobacco obtained from a farmer who had used no insecticide (lead arsenate) on his crop.

Patient 3 is of especial interest because he was the first one seen and also because he made his own diagnosis. When he first came in he stated that he believed his condition was due to smoking. At that time I tried to convince him that I did not think tobacco was responsible. It was several months later that another similar case was seen and the original one recalled. He was then asked to return to the office and a more detailed history was obtained. He stated that the more he smoked the worse the cutaneous condition became. He had also made the observation that he could smoke cigarets that he himself made of tobacco on which no lead arsenate had been used. When asked if he used lead arsenate on his own tobacco, he said that he had not done so for a good many years because when he did it made him sick and also caused his skin to break out and itch as it does now. This patient still had his dermatitis when seen at the second visit. He was also smoking. His blood arsenic was positive. He was asked to refrain from the use of tobacco entirely and within

TABLE 2.—*Amount of Arsenic Found in the Smoke of Five Popular Brands of Cigarets*

Cigaret	Number of Cigarets Smoked			
	10	20	30	40
Brand 1.....	0.004 mg.	0.006 mg.	0.008 mg.	0.014 mg.
Brand 2.....	0.008 mg.	0.014 mg.	0.010 mg.	0.030 mg.
Brand 3.....	0.004 mg.	0.014 mg.	0.018 mg.	0.020 mg.
Brand 4.....	0.002 mg.	0.008 mg.	0.012 mg.	0.018 mg.
Brand 5.....	0.004 mg.	0.004 mg.	0.016 mg.	0.020 mg.

Analysis of the smoke from twenty cigarets of brand 2 was checked by Dr. W. E. Bray of the University of Virginia, who reported 0.0112 mg. of arsenic. The smoke from twenty cigarets made of tobacco on which no insecticide (lead arsenate) had been used was negative for arsenic.

three weeks he was well. He has since been able to smoke continuously cigarets made of his own tobacco on which no insecticide had been used.

There are two cases reported as mild, by which I mean a generalized dry skin with only slight exfoliation and slight redness. The symptom of itching brought these patients to the office rather than their anxiety over the dermatitis. The eruption was of comparatively short duration.

There are four cases reported as moderate. Itching and erythema of the skin were present in all. The type of eruption was the one frequently seen following the injection of an arsenical.

There are two cases reported as severe. In both there was a generalized erythema of the skin with marked exfoliation. It is a type which is frequently seen in a patient under antisyphilitic therapy when the attending physician does not stop the arsenical as soon as the dermatitis starts.

CONTROL CASES

Table 4 shows that the blood of six patients who had severe dermatoses, all smokers, was analyzed for arsenic and found to be normal. The reason for this is to attempt to prove that arsenic is not retained in the blood as a result of impaired secretion from a severe dermatitis, but that when the blood test does show arsenic it can be relied on to indicate the etiologic agent. The blood of three moderate smokers and three heavy smokers, all apparently normal physically, has been analyzed for arsenic and found to be negative.

Case 1 deserves some mention because it was seen about the same time as the investigation on the two original cases was being made. It almost made me give up the whole idea. The patient came in with a severe

TABLE 3.—*Cases of Arsenical Dermatitis*

Case	Degree of Cutaneous Involvement	Blood Arsenic, Mg. per 100 Cc.	Urine Arsenic, Mg. per 100 Cc.	Progress of Case	Source of Arsenic	Final Blood Arsenic
1. R. W. C.	Severe	0.002	0.06	Well	Cigarets	Negative
2. R. H. D.	Severe	0.125	.....	Well	Cigarets	Negative
3. C. T. C.	Moderate	0.240	.....	Well	Cigarets	
4. L. R.	Moderate	0.020	.....	Well	Snuff	Negative
5. L. J. H.	Mild	Negative	0.002	Well	Cigarets	
6. W. N. V.	Moderate	0.040	.....	Well	Cigarets	
7. H. H. E.	Moderate	0.006	.....	Well	Pipe and chewing tobacco	
8. E. S. S.	Mild	0.060	.....	Well	Cigarets	Negative

exfoliative dermatitis which from its appearance was surely thought to be arsenical. Repeated blood tests were negative for arsenic. The patient used snuff freely. After several weeks it was decided that there must be some other cause. The history was obtained that she had been taking a drug for high blood pressure. Communication with her physician determined this drug to be sodium thiocyanate. She responded when the drug was removed. About six months later she went to another physician for treatment of her hypertension and he, not knowing about her sensitivity to the drug, placed her on it again. She immediately broke out in the same manner as previously. She again responded after the drug had been stopped. She had a positive patch test to sodium thiocyanate and a negative patch test to lead arsenate.

EFFECT OF TOBACCO ON POSTARSPHENAMINE DERMATITIS

Table 5 shows a series of four cases of dermatitis following neoarsphenamine in which it is thought that tobacco has been detrimental to the recovery. From the history and my own observations it is believed that the antisyphilitic drug was stopped immediately on the first sign of skin involvement.

Patient 1 was referred because of a slight itching following the sixth injection of neoarsphenamine. Both the physician and the patient stated that there had been no untoward reaction previously. In spite of this fact,

the man's condition rapidly became worse and it was only after six weeks of observation, when the patient's condition had reached the point where it was thought that he was going to die, that tobacco was discontinued. In less than one month's time he was well.

Patient 2 was a colored girl who had a mild cutaneous rash following the third injection of neoarsphenamine. The treatment was discontinued and in about three weeks' time her skin was entirely normal. She was then lost track of and was not seen again for eight months, at which time she had a moderately severe exfoliative dermatitis of three weeks' duration. She had had no further antisyphilitic treatment of any kind, but for three months previous to this recurrence she had been using snuff. Her blood was positive for arsenic. She had a positive patch test to 1:10,000 solution of neoarsphenamine and lead arsenate. The snuff was discontinued and in six weeks her skin was apparently normal.

Patient 3 is a colored man who was under observation in the clinic. He had a mild dermatitis following the third injection of neoarsphenamine. The drug was stopped immediately. He had had no previous itching. He was told to discontinue the use of tobacco, but he did not. He was not seen until two months later, at which time he had a severe exfoliative dermatitis. He was immediately hospitalized and for the past three months his condition has been gradually improving. However, although at the present time he is very much better he still shows a slight trace of arsenic in his blood. It is believed that the postarsphenamine dermatitis that this man had would have healed promptly if all the sources of arsenic had been removed.

TABLE 4.—*Control Cases*

Case	Diagnosis	Blood Arsenic	Final Status
1. R. C. C.	Exfoliative dermatitis	Negative	Used snuff but was allergic to sodium thiocyanate taken for high blood pressure
2. D. W. P.	Exfoliative dermatitis	Negative	Apparently followed a seborrheic dermatitis; smoked and chewed
3. E. T. D.	Infectious eczematoid dermatitis	Negative	Heavy smoker but cleared up on removal of abscessed teeth
4. J. S. M.	Infectious eczematoid dermatitis	Negative	Heavy smoker but well after treatment for acute tonsillitis
5. J. G. C.	Infectious eczematoid dermatitis	Negative	Heavy smoker but cleared up on removal of abscessed teeth
6. J. A. R.	Acute disseminated lupus erythematosis	Negative	Smoked, had marked exfoliation and pregnancy; patient died
7. G. D. J.	Normal control	Negative	Moderate smoker
8. M. E. T.	Normal control	Negative	Moderate smoker
9. R. M. D.	Normal control	Negative	Moderate smoker
10. J. H. P.	Normal control	Negative	Heavy smoker
11. H. V. A.	Normal control	Negative	Heavy smoker
12. E. E. B.	Normal control	Negative	Heavy smoker

Case 4 is one that is reviewed in retrospect. The patient was seen in 1936, at which time I did not realize that tobacco contained arsenic. She used snuff freely. She was referred to me by a physician who stated that her dermatitis began following the second injection of 0.2 Gm. of neoarsphenamine. I have since come to learn that this physician's statements are reliable. In spite of the fact that she had received a total of only 0.4 Gm. of neoarsphenamine, her condition progressed. She died with what is now believed to have been a condition due to arsenic in tobacco. It is thought that no person who gets a postarsphenamine dermatitis should use tobacco.

TABLE 5.—*Tobacco and Postarsphenamine Dermatitis*

Case	Diagnosis	Initial Blood Arsenic, Mg. per 100 Cc.	Final Blood Arsenic, Mg. per 100 Cc.	Comment
1. J. F.	Arsenical dermatitis	0.040	Negative	Cutaneous condition progressed until tobacco was stopped
2. M. H.	Arsenical dermatitis	0.080	Negative	Arsenical dermatitis healed; recurred with snuff habit
3. C. W.	Arsenical dermatitis	0.600	0.006	Cutaneous condition progressed until tobacco was stopped
4. A. S.	Arsenical dermatitis	Not done	Not done	Patient died in 1936; tobacco not thought of then

It is believed that any person under syphilitic therapy who gets a postarsphenamine dermatitis should not use tobacco in any form.

SUMMARY

It has been proved by other workers and myself that tobacco contains arsenic. It is common knowledge to those living in a tobacco section that farmers freely use lead arsenate as an insecticide to kill the horn worm. Nothing has been done or probably can be done in either the agricultural or manufacturing process to remove it. A series of cases with exfoliative dermatitis and positive blood arsenic, whose sources of arsenic were thought to be tobacco, was observed. The blood in a series of cases of severe dermatoses and normal individuals has been analyzed for arsenic and found to be negative, even though the subjects were heavy smokers. It is thought that there is a sufficient amount of arsenic in tobacco to have a very detrimental effect in cases of postarsphenamine dermatitis.

It is realized that the Gutzeit test may not be sensitive enough to determine a difference in the blood arsenic of smokers and nonsmokers.

It is believed that patients get this dermatitis because they are hypersensitive or allergic to arsenic.

This paper has attempted to present a theory. Its ultimate proof depends on the collaboration of other workers.

ABSTRACT OF DISCUSSION

DR. DUDLEY C. SMITH, Charlottesville, Va.: Dr. Barksdale's presentation calls attention first to an etiologic factor in some skin diseases and second to a contributing cause to untoward reactions in the modern treatment of syphilis. In persons hypersensitive to arsenic, enough of the substance can be introduced into the body by the use of tobacco to cause inflammatory changes in the skin. It is interesting to speculate how much effect occurs in other tissues, such as the kidneys or brain or aorta or the coronary vessels. Trivalent arsenic has an affinity for small arterioles and capillaries and thus may cause severe dermatitis, hemorrhagic encephalitis, purpura and possibly coronary disease. Pentavalent arsenic has affinity for structures of ectodermal origin. The taking of arsenic into the body from tobacco over a period of time may sensitize the tissues to this chemical, thereby causing from the same source later or preparing the basis for toxemia from other substances like arsphenamine. This work gives the dermatologist and syphilologist another bit of knowledge which will help to clarify the etiology of cutaneous eruptions and to prevent the all too prevalent

untoward reactions in the therapy of syphilis. In cases of erythematous eczema and persistent erythema multiforme, it might be worth while to eliminate the use of tobacco as a therapeutic test. It is definitely indicated that tobacco be discontinued by patients receiving antisyphilitic treatment. This is a more theoretical than practical suggestion, because few people will follow this direction. The development of a spray which the farmers can use on tobacco which would be cheap and at the same time easily applied would, of course, correct this condition. It is an honor to open the discussion on this presentation, which has just received a certificate of merit in the Scientific Exhibit.

DR. HARRY M. ROBINSON, Baltimore: Dr. Barksdale's paper presents an interesting premise which I think should be kept in mind as a possible factor causing persistence or recurrence of the eruption in postarsphenamine dermatitis. In my experience with 350 cases of postarsphenamine dermatitis, complete involution occurred in all the patients except the few that died, through treatment with simple antipruritic applications and supportive care, including intravenous injections of dextrose solution. In one of the patients the eruption recurred once after apparent complete involution, although no arsenic or other heavy metal in any form was being administered. In two others the eruption persisted somewhat longer than the usual run of cases, but in these as well as in all the others final involution eventually was brought about without difficulty and without enlisting the aid of such elements as Dr. Barksdale has mentioned: this in spite of the fact that almost all the patients, male and female, were smokers and generally indulged in smoking during and after convalescence. Two of the patients were sensitive to trivalent and pentavalent arsenicals, including potassium arsenite. When Dr. Barksdale told me of his report, I sent for some of my postarsphenamine exfoliative dermatitis patients and three returned, one Negro woman and two white men. These I examined with patch tests for sensitivity to neoarsphenamine, a popular brand of cigaret tobacco and dried Maryland tobacco leaf which had been obtained from a storage room. This tobacco leaf was assayed for arsenic and contained 6 micrograms per gram, which is about the normal amount of arsenic contained in tobacco. The Negro woman was positive to the patch test with Maryland tobacco leaf but not to the 30 per cent solution of neoarsphenamine or to the cigaret tobacco. One white man was strongly positive to the neoarsphenamine but not to either tobacco. The third patient did not react positively to any of the tests. I realize that the results of these tests have no significance, as all three patients smoked and none had any residual eruption at the time of testing, although all three had had severe types of the eruption, necessitating hospitalization. If I encounter cases of postarsphenamine dermatitis which do not involute in a reasonable time I shall attempt to determine the effect of tobacco or other elements as possible aggravating factors.

DR. MARION B. SULZBERGER, New York: In the arsphenamine sensitization which I have studied, while a few patients have been hypersensitive to arsenic the vast majority are not hypersensitive to the element arsenic at all. They are sensitive to trivalent arsenicals but not to trivalent arsenic as such, but to trivalent arsenic in an organic, benzolic combination. This can be demonstrated, for example, by their lack of clinical sensitivity to arsenic: one can often administer solution of potassium arsenite or sodium arsenate injections or even tryparsamide and other arsenicals with impunity to patients who have arsphenamine dermatitis. So that at least in most cases of arsphenamine dermatitis—but not in all—there is no sensitivity to the element arsenic as such. When individuals react to cutaneous tests with tobacco, I found that it was always to something in the tobacco other than the nicotine. That is as far as I could go in conclusions with regard to vascular sensitivity to tobacco. This refers not to the type of sensitivity which one sees in dermatitis of the sort that Dr. Barksdale has been studying but to the vascular sensitivities which are demonstrable in many cases of Berger's disease (thrombo-angiitis obliterans) and in other persons in the form of wheal reactions to scratch or intracutaneous tests with tobacco extracts. The opportunities for exposure to arsenic are numerous. This element occurs not only in tobacco but in beer, bread, wine, fruits and fish and has been known to occur in small quantities in volatile form and can be inhaled through the air. In certain districts, for example near smelting works, one finds a hundredfold increase in the amount of arsenic in the blood and urine of persons who live on the lee side of blast furnaces as compared with those on the windward side. It is also known that eating sea fish and especially shellfish will materially increase the arsenic levels of the blood and urine. It therefore seems that, if it were conceivable that arsphenamine dermatitis couid be maintained by the arsenic in tobacco, we should have to be careful not only of smoking but also of the food and drink of these patients. I should like to ask Dr. Barksdale whether he performed patch tests in these particular cases with water through which he has bubbled the smoke of the tobacco in question; and, if so, what were the results? Did this water contain appreciable amounts of arsenic? And particularly did it elicit positive patch tests in his patients and no reactions in controls?

DR. HERMAN SHARLIT, New York: Those of us who think in terms of specific allergies are somewhat confused when we are presented with allergens in terms of a single source that may not be completely elucidative of the allergen involved. Apparently the reactions that are induced in the skin here are coming from elements that are volatilized in a combustion mixture of a temperature well above 400 centigrade. What the form of the arsenic is at the moment of volatilization and as passed on to the lung is difficult to say. We must consider whether this may not be a lead arsenic compound, for the lead too is volatilized and the lead too gets into the lungs. It is possible the lead, either alone or in combination with the arsenic, plus other volatiles might have to be present to induce the sensitization in these individuals. At any rate, the deductions from such an investigation, if they are to be maintained, for example the injunction that people who are being treated with arsphenamine should, if there is any evidence of a sensitization to the trivalent arsenic, stop smoking, are serious restrictions for those who enjoy smoking. It would therefore be necessary to follow this through with a greater elucidation of the elements involved. I would be anxious to know, as Dr. Sulzberger suggested, what was contained in the water extract of the smoke. And in making these analyses in blood and urine, the lead also should be taken into consideration. One will realize in looking over the arsenic figures in the blood, as given in the tables, that they varied from a significant figure in the first to one in the third decimal place. That is a range of a hundredfold variation, with no apparent correlation with the clinical observations. Then many of the records indicated that there was no arsenic. I have had the impression that to find no arsenic in the blood is almost as rare as finding a high arsenic in the blood. There are still many hiatuses in leading to a conclusion with respect to whether it is arsenic alone that caused these disabilities.

DR. E. E. BARKSDALE, Danville, Va.: I appreciate the discussion and I have learned more probably than any one else. There are many facts in this experiment that need further investigation; unfortunately it was necessary to do this work in a small private laboratory with extremely limited facilities. I have been asked to explain the negative blood test. It is true that there is no such thing as a negative blood arsenic. In this work we have called the blood arsenic of normal individuals negative even though they might show a small trace of arsenic. While there is a large personal factor involved in reading the Gutzeit test, we have not called any of them positive unless they were definite. Dr. Robinson stated that he had not been able to obtain a positive patch test with tobacco; neither have I. The only positive patch tests in these cases have been obtained from lead arsenate itself. We have not done patch tests with distilled water of the mechanical smoker through which tobacco smoke has been bubbled; it brings up an interesting problem. I have used the word "hypersensitive" or "allergic" to explain these cases; I think a more descriptive phrase would be a "point of tolerance." Some people have a very low point of tolerance to arsenic. Fortunately, the point of tolerance for arsenic of most persons is much higher than the amount of arsenic that one could consume from tobacco.

MALARIA AND ARTIFICIAL FEVER IN THE TREATMENT OF PARESIS

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During the past two decades the widespread therapeutic use of malaria gave rise to the consideration of other pyrexial methods for the treatment of paresis. The present study has been designed to compare the therapeutic results obtained by use of artificial fever produced by physical methods with those obtained by the use of inoculated malaria in the treatment of paresis. These two methods of fever therapy were employed independently or in association with some form of chemotherapy and have been evaluated in terms of the clinical and serologic response observed in the patients. The effects of chemotherapy alone have not been evaluated.

TABLE 1.—*Duration of Treatment-Observation for Patients with Paresis*

Duration of Treatment-Observation in Years	Method of Therapy			
	Malaria		Artificial Fever	
	Number	Per Cent	Number	Per Cent
2	340	30.9	136	42.5
3	156	14.2	66	20.6
4	88	8.0	49	15.3
5	102	9.3	37	11.6
6	88	8.0	22	6.9
7	91	8.3	7	2.2
8	63	5.7	2	0.6
9	64	5.8	1	0.3
10	41	3.7	....	....
11	67	6.1	....	....
Total	1,100	100.0	320	100.0

THE DATA

A total of 1,420 patient records were pooled for this study. Of these, 1,100 patients were treated with malaria and 320 with artificial fever.

Prior to the administration of fever therapy, the diagnosis of paresis or of taboparesis was established for each patient. In evaluating the results of therapy among patients with taboparesis, only the responses of the paretic symptoms to the therapy have been considered.

The study was limited to patients with paresis followed two years or more after the beginning of fever therapy (table 1). The median age for all paretics in this series was 41.5 years when fever therapy was instituted. The average difference in age between patients with mild and those with severe paresis was approximately four years, the patients with mild paresis being the younger. The intermediate group stood midway in age between the mild and the severe. There was no age selection of candidates for one or the other type of fever therapy.

DEFINITIONS

The term "paresis" in this study refers to the symptom complex caused by syphilitic meningo-encephalitis, characterized by distinctive psychiatric, neurologic, serologic and spinal fluid abnormalities.

All patients were classified by degree of involvement on beginning treatment with fever therapy. The following subdivisions were maintained throughout the evaluation:

(*a*) Mild: Relatively free from signs of deterioration, with mental symptoms, usually transitory.

(*b*) Intermediate: Symptoms of manic excitement, depression or other psychiatric syndromes, in addition to evidence of moderate deterioration.

(*c*) Severe: Evidence of advanced deterioration.

The clinical results of therapy were defined as:

(*a*) Remission: Sufficient clinical recovery to permit the patient to return to his former socio-economic status.

(*b*) Improved: Complete or partial disappearance of clinical manifestations without corresponding improvement in the capacity to return to the former socio-economic status.

(*c*) Unimproved: No detectable clinical evidence of change in the course of the disease.

(*d*) Progressed: Clinical condition less satisfactory after therapy than before.

(*e*) Death: Treatment deaths during therapy, or deaths regardless of cause, occurring during or within three months subsequent to therapy.

Occasionally, further grouping of the cases in terms of clinical results was necessary in order to effect additional comparisons. These groups were:

(*a*) Clinical success: Remission.

(*b*) Clinical failure: Unimproved, progressed, death.

(*c*) Relapse: Reversal from a clinically successful result to a clinical failure.

The serologic results of therapy, as determined by spinal fluid and blood tests, were classed as:

(*a*) Positive (which includes cases with doubtful reactions).

(*b*) Negative.

(*c*) Not done.

The various degrees of abnormality of the spinal fluids were classed as:

(*a*) Group 1 (mildly positive): Spinal fluid in which the cell count was 10 or more, positive globulin test, with complement fixation or flocculation test negative or positive, and colloidal tests negative.

(*b*) Group 2 (moderately positive): Spinal fluid in which the cell count and globulin content were increased, with complement fixation or flocculation tests positive or weakly positive, and the colloidal test indeterminate or of the so-called luetic type.

(*c*) Group 3 (strongly positive): Spinal fluid in which the observations conformed to the so-called paretic formula, i. e. marked excess of globulin, strongly positive complement fixation results (at 0.2 cc. or less) or strongly positive flocculation tests, the paretic type curve on the colloidal test, and an increased cell count which may contain, in addition to small lymphocytes, large leukocytes and polymorphonuclear leukocytes.

(*d*) Group unknown: Spinal fluid in which the complement fixation or flocculation result was positive but results of other tests were unknown.

CLINICAL RESULTS

Yearly clinical remission rates were cumulated per hundred patients treated by method of therapy and degree of involvement of the paresis on beginning fever

Conducted by the cooperation of the Mayo Clinic, Rochester, Minn.; Central State Hospital, Indianapolis; Colorado Psychopathic Hospital, Denver; Miami Valley Hospital, Dayton, Ohio; Boston Psychopathic Hospital, and Strong Memorial Hospital, Rochester, N. Y. In addition to records from the institutions of the authors, the following clinic chiefs offered for analysis the records from their institutions: A. E. Bennett, M.D., Bishop Clarkson Memorial Hospital, Omaha; Harold N. Cole, M.D., Cleveland City and University Hospitals of Western Reserve University; J. R. Blalock, M.D., and Leland E. Hinsie, M.D., New York State Psychiatric Institute and Hospital; Frank R. Menagh, M.D., Henry Ford Hospital, Detroit, and Ernest H. Parsons, Fitzsimons General Hospital, Denver. The Committee acknowledges the preliminary statistical preparation of the material by Albert P. Iskrant, A.B., U. S. Public Health Service.

therapy. The total successful results of therapy are shown at the conclusion of any given year within the entire duration of treatment-observation. The increase in the successful outcomes of therapy within a given year may be obtained by subtraction (table 2).

Among the patients with mild and intermediate paresis there were no statistically significant differences

TABLE 2.—*Average Yearly Clinical Remission Rates (Cumulated)*

End of Each Year of Treatment-Observation	Rate of Remission per 100 Paretic Patients Under Treatment-Observation							
	Mild		Intermediate		Severe		Total	
	Malaria	Artificial Fever	Malaria	Artificial Fever	Malaria	Artificial Fever	Malaria	Artificial Fever
Three Year Treatment-Observation								
1	36.4	37.7	13.7	16.2	0.0	3.9	13.8	18.0
2	45.1	48.4	20.2	21.0	0.5	9.0	18.9	24.7
3	51.7	50.2	24.2	23.6	0.9	11.3	22.4	27.2
Four Year Treatment-Observation								
1	36.4	35.2	13.3	16.8	0.0	2.9	13.4	16.9
2	44.7	45.9	19.6	19.2	0.5	8.6	18.4	22.6
3	51.9	47.3	23.5	22.0	1.0	11.3	21.9	25.1
4	52.3	52.8	25.1	30.9	1.0	11.3	22.8	30.3

between the rates of remission obtained under malaria and those obtained under artificial fever therapy. Sharp and statistically reliable differences were noted between the results of the two methods of therapy among patients with severe paresis on beginning treatment.

The superiority of remission rates obtained under artificial fever therapy in patients with severe paresis but not in those with mild or intermediate paresis led to a complete review of the records by one of us (H. C. Solomon). This uniform classification of patients by degree of involvement of paresis on beginning treatment confirmed the original observations.

The earlier in the course of the disease the fever therapy was instituted, the more favorable were the clinical results. By the conclusion of three or four years of treatment-observation, more than one half the patients with mild paresis treated with either method of therapy were clinically "cured." The chances of clinical recovery with either method of therapy were reduced to approximately one in four for patients with intermediate paresis. The remission rates for patients with severe paresis, treated and observed for the same length of time, decreased to approximately one in a hundred under malaria and ten in a hundred under artificial fever (table 2). Proportionately more clinical progressions occurred in patients with severe paresis under malaria than under artificial fever therapy. Except for the better clinical response to artificial fever in patients with severe paresis (more clinical remissions and fewer clinical progressions) there were no other statistically reliable differences in the clinical results obtained with the two types of therapy (table 3).

For purposes of this study, we defined as treatment deaths not only patients who died during fever therapy but also those who died regardless of cause within three months of treatment. Under this definition the total crude death rate was higher with malaria (13 per cent) than with artificial fever (8 per cent). A subdivision of the material by degree of involvement of paresis prior to fever therapy indicates that the more severe the paresis the higher the frequency of death (table 4). This was true of patients treated with either type of fever therapy. Within each degree of involvement the percentage of deaths was higher under malaria than under artificial fever therapy. Although these individual differences were not statistically significant in themselves, they all point in the same direction. Had sufficient material been available, a more definite statement as to the relative frequency of death under these two methods of treatment might have been possible through the construction of a death curve for the paretic. Such a death curve compared with that for the general population would eliminate some of the uncontrolled factors in the present investigation.

The relative speed with which remissions were obtained was determined on the basis of all cases treated and observed for two or more years. To determine the speed of remission, the data were not limited to cases under treatment-observation for three or four year periods, because cases more resistant to treatment tended to remain under observation, while those less resistant disappeared earlier. Of the total remissions obtained under either method of therapy, approximately 90 per cent of the successful results occurred by the end of the third year. The degree of paretic involvement on beginning fever therapy influenced the frequency and speed of expected remissions. Remissions were obtained from one to two years earlier in mild than in intermediate or severe paresis.

None of the patients in whom clinical improvement was delayed until the third year after beginning therapy at any time reached the remission stage. Of the 432 with clinical improvement during the first or second year after beginning fever therapy, subsequent clinical remissions were obtained in 34 per cent of those with clinical improvement the first year and 12 per cent of those in whom clinical improvement was delayed until the second year. Therefore the earlier the positive clinical response was obtained, the better were the prospects for eventual remission.

Once a complete remission had been obtained, the chances of its being maintained were 95 out of 100. In the malaria-treated group 3.3 per cent and in the artificial fever group 5.5 per cent of the remissions subsequently relapsed. The available data show that fifteen of a total of seventeen relapses occurred within

TABLE 3.—*Clinical Results After Third Year in Patients Under Treatment-Observation Three or More Years* *

Method of Fever Therapy	Remission		Improved		Unimproved		Progressed		Death		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Mild Paresis												
Malaria	87	52.4	52	31.3	12	7.2	6	3.6	9	5.4	166	100.0
Artificial fever	32	59.3	10	18.5	6	11.1	4	7.4	2	3.7	54	100.0
Intermediate Paresis												
Malaria	120	27.3	159	36.1	69	15.7	40	9.1	52	11.8	440	100.0
Artificial fever	27	28.1	40	41.7	14	14.6	5	5.2	10	10.4	96	100.0
Severe Paresis												
Malaria	2	0.8	40	16.1	88	35.3	33	13.3	86	34.5	249	100.0
Artificial fever	6	12.0	8	16.0	20	40.0	2	4.0	14	28.0	50	100.0

* Including treatment deaths and deaths within three months of treatment.

three years subsequent to the year of remission. The highest percentage of relapses occurred among the patients with severe paresis. The differences in the relapse rates of the two methods of fever therapy were not statistically significant.

SEROLOGIC RESULTS

Laboratory data, consisting of at least one pretherapy and one posttherapy spinal fluid and blood examination, were available for only one half to three fourths of the

1,100 cases treated with malaria and for from 75 to 90 per cent of the 320 cases treated with artificial fever. It was assumed that the standards and technics of laboratory testing were comparable in the several clinics cooperating in this study.

Regardless of the method of therapy, the percentages of reversal both in spinal fluid and in blood increased as the duration of treatment-observation grew longer. Spinal fluid reversal rates at the conclusion of each of four annual periods were not only more rapid but approximately twice as frequent under malaria as under artificial fever. Positive blood reversed more rapidly though not in greater proportion than positive spinal fluid. The percentage of blood reversals was greater in the malaria-treated group but not so rapid as in the artificial fever group.

TABLE 4.—*Treatment Deaths and Deaths Within Three Months of Treatment*

Stage of Paresis	Malaria						Artificial Fever					
	Treatment Deaths		Deaths Within 3 Months		Total Deaths		Treatment Deaths		Deaths Within 3 Months		Total Deaths	
	Number	Per Cent of Total Treated Cases	Number	Per Cent of Total Treated Cases	Number	Per Cent of Total Treated Cases	Number	Per Cent of Total Treated Cases	Number	Per Cent of Total Treated Cases	Number	Per Cent of Total Treated Cases
Mild	4	1.9	5	2.3	9	4.2	..	....	2	2.3	2	2.3
Intermediate	23	4.2	29	5.2	52	9.4	4	2.6	6	3.9	10	6.5
Severe	41	12.3	45	13.5	86	25.8	3	3.8	11	14.1	14	17.9
Total	68	6.2	79	7.2	147	13.4	7	2.2	19	5.9	26	8.1

These differences in serologic response to the two methods of therapy were further investigated as to the abnormality of spinal fluid prior to fever therapy and to the influence of chemotherapeutic agents.

The more abnormal the spinal fluid the less responsive it was to any type of treatment. However, it was found that proportionately as many patients treated with malaria as with artificial fever had strongly abnormal (paretic type) spinal fluid. Therefore, any increase in the spinal fluid reversal rate in the malaria-treated patients was not due to favorable differences in the pretherapy abnormality of spinal fluid in that group.

To determine the effect of chemotherapy, the patients under study were divided into two major groups: those receiving no chemotherapy and those who were given chemotherapy in addition to or in connection with fever therapy. Since the spinal fluid rates were influenced by the duration of the treatment-observation period, the comparison was confined to the status of the spinal fluid and blood during the third year of treatment-observation of patients who were observed for three or more years.

The percentages of spinal fluid and blood reversals in the malaria and artificial fever therapy patients not receiving chemotherapy were similar. None of the differences were statistically significant. Among those patients treated with chemotherapy better results were observed in the malaria than in the artificial fever group. These were statistically significant (table 5).

In evaluating the specific arsenical used in conjunction with fever therapy it was found that the number of patients treated with arsphenamine only, or with the combination of arsphenamine and tryparsamide, were too few to permit the establishment of satisfactory statistical differences, but those treated with tryparsamide and a heavy metal represented a sufficient number for this purpose. The percentages of spinal fluid and blood serologic reversals obtained through treatment with malaria plus tryparsamide were significantly higher than those obtained with artificial fever plus tryparsamide.

Twice as high a proportion of patients experienced blood and spinal fluid reversals when chemotherapy was employed with malaria as when similar forms of chemotherapy were used with artificial fever. The amount of such chemotherapy administered to each fever group was evaluated. For this purpose treatment with various forms of chemotherapy was reduced to "chemotherapeutic units" based on the following assumptions:

1 injection of a trivalent arsenical, 1 treatment unit.
1 injection of a pentavalent arsenical (tryparsamide), 1 treatment unit.
0.35 intraspinal treatment, 1 treatment unit.

Recognizing that the analysis is based on an arbitrary assumption of "chemotherapeutic units," the apparent superiority in spinal fluid reversal rates of the malaria patients treated with auxiliary chemotherapy suggests association with a greater amount of chemotherapy administered. By the end of the third year the patients with spinal fluid reversals treated with malaria had received 17 per cent more chemotherapy than those treated with artificial fever therapy.

Chemotherapy, auxiliary to either type of fever therapy, appeared necessary not only to obtain a higher percentage of spinal fluid reversals but also to maintain these reversals. Among patients not treated with auxiliary chemotherapy, approximately 42 per cent of all spinal fluid reversals subsequently relapsed, as compared with only 24 per cent spinal fluid relapses in cases treated with auxiliary chemotherapy. Two thirds of all the spinal fluid relapses, regardless of whether or not chemotherapy was employed, occurred within one year following the original reversal.

TABLE 5.—*Posttherapy Status of Originally Positive Spinal Fluids and Blood After Three Years of Treatment-Observation in Paretic Patients Treated with Fever Only and with Fever Plus Chemotherapy*

Method of Therapy	Posttherapy Status			
	Spinal Fluids		Blood	
	Per Cent of Negative	Total Cases Positive	Per Cent of Negative	Total Cases Positive
Malaria only	5.8	94.2	15.9	84.1
Artificial fever only	11.1	88.9	13.5	86.5
Total fever only	6.7	93.3	15.4	84.6
Malaria plus chemotherapy	29.6	70.4	30.6	69.4
Artificial fever plus chemotherapy	14.3	85.7	13.6	86.4
Total fever plus chemotherapy	25.5	74.5	25.4	74.6

The significance of the blood was studied as an indication of the spinal fluid reaction. Of patients with originally positive blood and spinal fluids, on termination of four years' treatment-observation, only 15 per cent had obtained a reversal of both the blood and the spinal fluid, whereas of 63 per cent the blood and spinal fluid remained positive. Therefore a negative blood did not indicate the status of the spinal fluid but a persistently positive blood was frequently indicative of a positive spinal fluid.

RELATION OF CLINICAL TO SEROLOGIC RESULTS

Clinical and serologic outcomes of therapy were studied to determine their relationship in terms of frequency and time. Reversals of both blood and spinal fluid were associated more than twice as frequently with clinical success as with clinical failure. In spite of the better serologic showing of patients with clinical success, it should be emphasized that clinical success was not accompanied by complete serologic reversal (blood and spinal fluid) in more than half of the cases. These facts indicate that clinical success was not necessarily dependent on serologic reversal (table 6).

The reversal of the spinal fluid was more important than the reversal of blood in indicating the chances of complete clinical recovery. Thus, regardless of the status of the blood, if the spinal fluid was negative, clinical success was obtained in 60 per cent of the cases as compared with only 40 per cent in cases with negative blood but positive spinal fluid.

Study of the time relationship between clinical and serologic success was based on seventy-one cases in which both clinical and serologic recovery were

TABLE 6.—*Relation of Clinical to Serologic Results Among Patients with Positive Spinal Fluids and Blood on Beginning Fever Therapy* *

Clinical Results of Therapy	Posttherapy Spinal Fluid	Posttherapy Blood: Negative Number	Negative Per Cent	Positive Number	Positive Per Cent	Total Number	Total Per Cent
Clinical Success†	Negative	71	23.9	39	13.1	110	37.0
	Positive	33	11.1	154	51.9	187	63.0
	Total	104	35.0	193	65.0	297	100.0
Clinical Failure‡	Negative	37	11.1	24	7.2	61	18.3
	Positive	46	13.9	226	67.9	272	81.7
	Total	83	24.9	250	75.1	333	100.0

* Excludes cases in which serologic tests were not performed after therapy.

† Includes cases which maintained remission.

‡ Includes cases reported as unimproved, progressed, deaths resulting from therapy, or occurring within three months of therapy.

reported. In three fourths of these cases clinical remission either preceded serologic reversal or occurred during the same year. When clinical remission preceded serologic recovery, the average difference in time was between two and three years. In the other fourth of the seventy-one cases serologic recovery occurred before clinical remission by an average of from two to three years.

DURATION AND INTENSITY OF ARTIFICIAL FEVER IN RELATION TO CLINICAL RESULTS

All patients treated with artificial fever were classified into four major groups based on the average duration and intensity of fever (groups A, B, C and D). These schematic arrangements of average duration and intensity of fever, which permitted an evaluation of clinical results in terms of these two factors, were as follows:

Group A: Minimum duration and intensity of fever; an average total of thirty and one-half hours above 101 F. (38.3 C.); an average of 12.8 sessions of two and one-half hours comprising the total course; maximum temperature at 104.9 F. (40.5 C.); an average of 26 per cent of the total fever time at a level between 104 and 104.9 F. (40 to 40.5 C.).

Group B: Maximum duration and moderate intensity of fever; an average total of sixty-nine hours above 101 F. (38.3 C.); an average of 10.3 sessions of six and one-half hours comprising the total course; maximum temperature at 105.9 F. (41 C.); an average of 38 per cent of the total fever time at a level between 105 and 105.9 F. (40.6 to 41 C.).

Group C: Moderate duration and high intensity of fever; an average total of fifty-six hours above 101 F. (38.3 C.); an average of 7.8 sessions of seven hours comprising the total course; maximum temperature at 106.9 F. (41.6 C.); an average of 41 per cent of the total fever time at a level between 106 and 106.9 F. (41.1 to 41.6 C.).

Group D: Moderate duration and maximum intensity of fever; an average of forty-four hours above 101 F. (38.3 C.); an average of 5.5 sessions of eight hours comprising the total course; maximum temperature at 107 F. (41.7 C.) or above; an average of 57 per cent of the total fever time at a level between 106 and 106.9 F. (41.1 to 41.6 C.) supplemented by an average of 8 per cent at a level of 107 F. (41.7 C.) or above.

Clinical results obtained through the use of these schematic arrangements of artificial fever time were measured by percentages of complete clinical remission.

Maintaining the material by degree of involvement of the paresis, it was found that the less severe the paresis the higher the percentage of clinical remission. There were 70 per cent clinical remissions among twenty-seven patients with mild paresis who each obtained an average of sixty-nine hours of fever (group C) above 101 F. (38.3 C.), of which forty-eight hours was at a temperature level above 105 F. (40.6 C.). Of the twenty-six patients with mild paresis classified under groups A, B or D the percentage of clinical remissions was considerably lower.

In a total of ninety patients with intermediate paresis, forty were subjected to the average fever described by group C, and in this group 37.5 per cent obtained clinical remissions. Of the ten patients classified under group D, four (or 40 per cent) had a clinical remission. In the remaining forty patients the remission rate was about 20 per cent.

Thirty-seven patients with severe paresis were treated with artificial fever. Five (21 per cent) of the twenty-four who were treated under the arrangement of average fever time defined by group C obtained clinical remissions. There was one clinical remission among the five patients treated under group D. No clinical remissions were reported in the remaining eight cases of severe paresis treated under average fever described in groups A and B.

These data indicate that the best results were obtained by the patients treated under the average fever time and intensity described under group C. Although equally good clinical results were obtained by patients classified under group D, the higher intensity of fever administered to patients in this group did not increase the percentage of clinical remissions. The patients in group C were further subdivided into two groups: groups C-1 and C-2. The maximum intensity of the artificial fever administered to patients in group C-1 ranged from 106 to 106.4 F. (41.1 to 41.3 C.), while among patients included under group C-2 the maximum temperature ranged between 106.5 and 106.9 F. (41.4 and 41.6 C.). The percentages of clinical remission obtained by patients in groups C-1 and C-2 were similar. Therefore it may be concluded that no clinical advantages were gained by submitting patients to temperatures of 106.5 F. (41.4 C.) or above. This observation is particularly important since we are of the opinion that temperatures between 106.5 and 106.7 F. (41.4 and 41.5 C.) are apparently the highest safe temperatures that can be used in clinical practice, and then only when surrounded by safeguards.

SUMMARY

This study evaluates the clinical and serologic results obtained in paresis with artificial fever as compared with malaria therapy. There were 1,100 patients treated with malaria and 320 treated with artificial fever. Throughout the study the data are presented in terms of degree of involvement of paresis on beginning fever therapy. Patients with "mild paresis" were relatively free of deterioration, and their mental symptoms were usually transitory. Patients classified as having "intermediate paresis" exhibited symptoms of manic excitement, depression or other psychiatric syndromes, in addition to evidence of moderate deterioration. Patients with "severe paresis" gave evidence of advanced deterioration.

CLINICAL RESULTS

1. Under either method of fever therapy, the earlier in its course the paresis was treated the more favorable were the results of therapy.

2. The chances of clinical remission in patients with mild paresis were approximately one out of two; intermediate paresis, one out of four, and severe paresis from one to ten out of 100.

3. Clinical responses to either type of fever therapy were similar in patients with mild or intermediate paresis on beginning fever therapy. However, this similarity disappeared when treatment was administered to patients with severe paresis. In fact, the remission rates for patients with severe paresis treated and observed for the same length of time was one out of 100 with malaria, as compared with ten out of 100 with artificial fever.

4. Treatment deaths were defined as due to treatment regardless of cause, provided death occurred within three months of the fever therapy. Under this definition the crude death rate was higher with malaria (13 per cent) than with artificial fever (8 per cent). The more severe the paresis on beginning treatment with either type of therapy, the higher was the frequency of death. Within each degree of paretic involvement the crude death rate was higher under malaria than under artificial fever. These differences in death rates by degree of involvement under the two methods of fever therapy were not statistically significant but as a series they all point in the same direction.

5. Approximately 90 per cent of the total clinical remissions obtained under either method of therapy occurred by the end of the third year of treatment-observation. The degree of paretic involvement on beginning fever therapy influenced the frequency and the speed of expected remissions. Clinical remissions were obtained from one to two years earlier in patients with mild than in intermediate or severe paresis.

6. None of the patients in whom clinical improvement was delayed until the third year after beginning fever therapy at any time reached the remission stage. Of 432 patients with clinical improvement during the first or second years after beginning fever therapy, 34 per cent of those with clinical improvement the first year and 12 per cent of those in whom clinical improvement was delayed until the second year subsequently achieved complete clinical remission.

7. Once a complete remission had been obtained, the chances of its being maintained under either method of fever therapy were ninety-five out of 100. In a total of seventeen relapses, fifteen occurred within three years subsequent to the year of remission. Relapses were more frequent in severe paresis than in mild or intermediate paresis.

SEROLOGIC RESULTS

1. Reversal rates for originally positive spinal fluid and blood increased as the duration of treatment-observation increased.

2. Positive blood reversed more rapidly though not in greater proportion than positive spinal fluid. The degree of spinal fluid abnormality on beginning fever therapy influenced the proportion of expected reversals.

3. In patients treated with fever plus chemotherapy the annual rates of spinal fluid as well as blood reversal were consistently higher with malaria than with artificial fever, but this difference was assumed to be due to the greater amount of chemotherapy (17 per cent more) administered to the malaria patients. Without the use of auxiliary chemotherapy there were no differences between the spinal fluid and blood reversal rates of patients treated with malaria and those treated with artificial fever.

4. Blood as well as spinal fluid reversal rates were at least twice as great with as without the use of auxiliary chemotherapy. Among patients not treated with auxiliary chemotherapy 42 per cent of all spinal fluid reversals subsequently relapsed as contrasted to only 24 per cent spinal fluid relapses among patients treated with auxiliary chemotherapy.

5. Two thirds of all the relapses from spinal fluid reversal occurred within one year following the original reversal.

6. Negative blood serologic reaction did not indicate the status of the spinal fluid, but persistently positive blood serologic reaction was indicative of positive spinal fluid reaction.

RELATION OF CLINICAL TO SEROLOGIC RESULTS

1. Reversals of both blood and spinal fluid were associated more than twice as frequently with clinical success as with clinical failure. However, since clinical success was not accompanied by complete reversal (blood and spinal fluid) in 52 per cent of the cases it follows that clinical success was not necessarily dependent on serologic reversal.

2. Reversal of the spinal fluid was more important than reversal of the blood in indicating the chances of complete clinical recovery.

3. In three fourths of the cases with clinical as well as serologic recoveries, the clinical remission preceded or occurred during the same year as the serologic reversal. When the clinical remission preceded the serologic reversal, it did so by an average difference of from two to three years. In the remaining fourth of the cases in which serologic recovery occurred first, an average of from two to three years elapsed before clinical remission was obtained.

CLINICAL OUTCOME IN TERMS OF DURATION AND INTENSITY OF FEVER

The highest percentage of clinical remissions was obtained in patients treated with an average of sixty-nine hours of fever above 101 F. (38.3 C.), of which total fever time 70 per cent was at a level above 105 F. (40.6 C.) with a maximum temperature of 106.9 F. (41.6 C.). Equally good results were obtained in patients treated with an average of forty-four hours of fever above 101 F. (38.3 C.), of which total time 57 per cent was above 106 F. (41.0 C.) with a maximum temperature 107 F. (41.7 C.). We are of the opinion that fever administered at levels above 106.7 F. (41.5 C.) introduces unnecessary hazards.

Clinical Notes, Suggestions and New Instruments

MULTIPLE LACERATIONS OF MUCOSA OF THE RECTUM AND SIGMOID FROM A FOREIGN BODY INGESTED WITH GRAPE JELLY

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One of the most interesting phases of proctology is the subject of foreign bodies. The literature contains numerous reports of the recovery of these objects from the rectum and the sigmoid, where either they gain entrance by ingestion, by introduction through the anal canal or by perforation from an adjacent viscus, or they form in situ. Of these the oral route is the commonest, and though the ingestion is usually accidental it may be intentional for purposes of concealment, suicide or entertainment. In many instances the patient is conscious of the fact that he swallowed the object, but often he is unaware of this for it may occur during anesthesia, intoxication or other semistuporous states.

One is amazed by the variety and number of ingested objects that have been removed from the rectum. Gant [1] mentions more than fifty different kinds, and a complete list very likely would include many more. Probably the largest number of foreign bodies ever removed were a group of 1,874 cherry pits impacted in the rectum of a man 37 years old. This case was reported by Falk [2] in 1915. The patient complained of gradually increasing constipation, swelling of the abdomen and finally diarrhea. Examination revealed the impaction in the rectum, from which 897 pits were removed digitally. The next day an additional 399 were obtained, and one hour later the patient passed 578 more. He had been eating cherries during that entire summer and had not taken the trouble to remove the pits.

Foreign bodies may pass through the gastrointestinal tract without causing any trouble. This often is the case when the object is small and smooth, as a bead, marble or button. However, when it is larger disturbances usually develop, the clinical picture produced being dependent on the physical characteristics of the object in question and the segment of the gastrointestinal tract involved.

A large foreign body such as a ball, key or set of teeth may cause pain as it is swallowed, epigastric distress and vomiting when in the stomach and abdominal cramps while going through the intestine. Although complete obstruction is infrequently produced, interference with the passage of the contents through the gastrointestinal tract is not uncommon, occurring when the object becomes lodged at some point. The most frequent sites are the esophagus, the pylorus, the duodenum, the ileocecal region, the rectosigmoid juncture and the lower part of the rectum.

If the object is sharp like a pin, a fish bone or a piece of glass it may lacerate the mucosa to cause bleeding or it may perforate the bowel and lead to infection, abscess, fistula or peritonitis. When the lacerations are large or numerous, sufficient blood will be lost to color the stool.

With a foreign body in the rectum the patient may experience a sense of pressure, weight or fulness associated with a desire for a bowel movement, which will be difficult if the object is large, and painful and associated with bleeding if it is sharp and lacerates the anal canal while being expelled. Occasionally the foreign body forms a nucleus around which feces collect and inspissate. In these cases constipation gradually becomes more marked, and eventually a stercoral type of diarrhea may develop.

As a rule it is not very difficult to find a foreign body in the rectum. At times it can be seen protruding through the anus. Usually it can be found on digital examination. When it is beyond the reach of the finger, the routine proctoscopic and sigmoidoscopic examination will reveal it and the injuries of the mucosa that may be present. One should not overlook a small foreign body, which may be caught in an anal crypt or on the superior surface of a valve of Houston. Roentgenologic examination of the colon is important in locating those foreign bodies beyond the reach of the sigmoidoscope. Often more difficulty is encountered in the removal of the object than in the diagnosis, and much ingenuity may be required to accomplish this successfully.

The following report makes an interesting addition to the list of unusual ingested foreign bodies which cause multiple lacerations of the mucosa of the rectum and sigmoid with rectal bleeding. A review of the literature fails to reveal an account of a similar case.

REPORT OF CASE

On March 19, 1936, Dr. N. consulted me about Mrs. N. T., a white woman aged 38, who complained of abdominal cramps and bloody bowel movements. Six days previously she had eaten some grape jelly that seemed gritty. The following day while she was eating more of the same jelly something cut her tongue and caused it to bleed. She removed a sharp object from her tongue and on seeing it immediately called her physician, fearing that she had swallowed some glass. Vomiting and later abdominal pain developed and she began to pass bloody stools.

Dr. N. examined her, treated the tongue, prescribed a soft diet and liquid petrolatum and then examined the jelly. In it he found some flat, sharp, pointed, roughly triangular to spearhead shaped crystalline objects that were colorless to yellowish and up to one-fourth inch in longest dimension. He too thought that they were pieces of glass but for verification sent them to a chemist for analysis.

Because bloody stools continued to be passed, I was asked to make a proctologic examination. Except for a mildly tender abdomen the general physical picture was normal. Two linear lacerations approximately one-fourth inch long were seen in the skin of the outer portion of the anal canal. They were superficial, with thin edges and hemorrhagic bases. The tone of the anal muscles was increased and the anal canal was tender.

The mucosa of the lower 10 inches of the rectum and the sigmoid as seen through the proctoscope and sigmoidoscope presented a number of lacerations, some lying obliquely and others in the long axis of the bowel. They were up to 3 mm. deep and 13 mm. long, being most numerous in the lower part of the rectum. Some were irregular and others linear, and in the deeper ones were bits of sharp glasslike particles similar to those found in the jelly. The mucosa did not show any other changes.

The lesions in the mucosa were definitely lacerations and did not resemble the umbilicated ulcers of amebic dysentery, the elliptic ulcerations of tuberculosis of the bowel or the irregular secondary infected ulcers of chronic thrombo-ulcerative colitis.

From the definite history of laceration of the tongue while eating, the vomiting, the abdominal pains and the passage of bloody stools coupled with the lacerations in the mucosa of the rectum and the sigmoid, it was readily evident that the patient was suffering from the traumatic effects of the sharp foreign bodies which she had swallowed.

After continuation of the nonresidue diet, liquid petrolatum and antiseptic irrigations, the bleeding gradually subsided and the wounds healed.

COMMENT

The interesting feature in this case is the type of foreign body that was present in the jelly, for contrary to expectations the chemist, Mr. George Borrowman, reported that the objects were not pieces of glass but crystals of potassium bitartrate.

According to Sir Edward Thorpe,[3] potassium bitartrate is a natural constituent of grape juice and because of its lesser solubility in alcohol is deposited on fermentation, partly as a crystalline crust (argol) and partly with the lees. Its solubility is diminished by the presence of tartaric acid, which

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2. Falk, J.: Ein seltsamer Befund im Mastdarm eines Mannes, Med. Klin. **11**: 1158 (Oct. 17) 1915.

3. Thorpe, Sir Edward: A Dictionary of Applied Chemistry, London, Longmans, Green & Co., Ltd., 1926, vol. 6, p. 687.

also exists naturally in grape juice, and potassium sulfate, potassium nitrate and especially potassium chloride greatly reduce its solubility in water. Its crystals are aggregates of small hard rhombic prisms.[4]

The question "Why did crystallization take place?" naturally arises. Commercially, grape jelly is usually made not from whole grapes but from grape juice, which is taken from large storage tanks as needed. Perhaps some change occurred in the grape juice before it was processed into jelly. Bacterial fermentation with alcohol formation and crystallization is unlikely because the juice is stored at a low temperature. Autogenous enzyme action, however, might have changed the acidity of the juice, and perhaps in the concentration incident to jelly making crystallization followed. The question can be answered only after a careful investigation at the plant.

The question now arises, Can crystals of potassium bitartrate go through the entire gastrointestinal tract without being dissolved? This depends on (1) the number, the size and the solubility of the crystals, (2) the character, the composition and the p_H of the intestinal contents and (3) the length of time in the intestinal tract. In one set of circumstances they may dissolve completely and in another they may not. In this case, however, it is apparent that complete solution did not occur because crystals were removed from the lacerations in the rectum.

Another matter of interest is the question whether or not there were any lacerations, in addition to those seen in the rectum and the sigmoid, in the rest of the gastrointestinal tract. One might expect that the soft contents of the upper intestinal canal would coat the crystals and prevent any damage to the mucosa. But in view of the vomiting, the epigastric distress, the abdominal cramps and the continued passage of bloody feces it is assumed that lacerations were probably present throughout the intestine.

CONCLUSIONS

An ingested foreign body may lacerate the mucosa of the rectum and the sigmoid and cause rectal bleeding.

A case of rectal bleeding was due to multiple lacerations from crystals of potassium bitartrate ingested with grape jelly.

58 East Washington Street.

AN ADDITIONAL PHYSICAL SIGN OF A MALIGNANT TUMOR OF THE BREAST

CLARENCE E. REES, M.D., SAN DIEGO, CALIF.

The characteristic fixation of malignant tumors of the breast either to the skin or to the fascia of the pectoralis major muscle is well known. This characteristic is due to the arrangement of the areolar tissue and of the capsule of the breast. The continuity of the stroma throughout the gland forms compartments for the secreting elements. Fibrous prolongations from the stroma of the breast connect the breast in its anterior portion with the under surface of the skin and in its posterior portion with the aponeurosis of the pectoralis major muscle. Thus all tissues surrounding the breast are bound to it by connective tissue fibers which are continuous with the matrix of the breast.

Because of this peculiar structure, a malignant tumor in the breast infiltrates the matrix and causes a contraction of its fibrous elements. This contraction produces an abnormal firmness in the area of involvement. As the process progresses this contraction radiates in all directions from the tumor and causes the tumor to become fixed to the surrounding structures. The fixation is first apparent in structures which lie nearest to the tumor mass. If the tumor is near the skin, the fixation first involves the skin; if it is central, fixation results in retraction of the nipple; if it is deep, the fixation first involves the muscles.

Fixation and dimpling of the skin are not difficult to observe or to elicit. The same is true of retraction of the nipple. Deep fixation is more difficult to ascertain. It is especially difficult in the many cases in which there is loss of muscle tone due to the degenerative changes of age. Because of this loss of muscle tone the pectoralis major muscle, even with the arm in full abduction, is subject to a wide range of motion, and fixation of the tumor to this structure may not be readily demonstrated by the usual methods. My associates and I have found that fixation can be demonstrated in such cases by an additional maneuver.

After the usual procedures with the arm held at the side and then in abduction in both the sitting and the horizontal position have been carried out, the patient, while in the horizontal position, is requested to bring the arm on the affected side to a right angle and, with the examiner standing in the plane of the axilla on that side, to exert pressure with the arm against the examiner. This procedure actively tenses the pectoralis major muscle so that if the tumor is attached to the pectoralis fascia it will immediately become fixed and immobile.

This maneuver has been used over a period of at least ten years and has been found to reveal fixation of the tumor to the pectoralis major muscle in many cases in which such fixation could not be demonstrated otherwise. I feel, therefore, that it constitutes a valuable additional physical sign of malignant condition of the breast.

4. Schiff: Ann. d. Chem., 1859, p. 11289, quoted by Thorpe.[3]

From the Rees-Stealy Clinic.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

SHARK LIVER OIL.—The oil extracted from the livers of the shark, mainly of the variety Hypoprion brevirostris (lemon), but any or all of the following varieties may be included: Odontaspis littocalis (sand), Isurus punctatus (mackerel), Triakis semifasciatum (leopard), Sphyrna zygaena (hammerhead), Carcharias obscurus (dusky), Ginglymostoma cirratum (nurse), Carcharias milberti (white) and Carcharias limbatus (black tip). It is biologically assayed to have a potency of not less than 10,500 units of vitamin A (U. S. P.) per gram and of not less than 40 units of vitamin D (U. S. P.) per gram; the latter is insignificant if taken according to directions.

Actions and Uses.—See the general article Fish Liver Oils, Preparations and Concentrates, New and Nonofficial Remedies, 1940, p. 535.

Dosage.—One capsule, or about 8 minims, daily.

Shark liver oil is an amber to brown oily liquid possessing a fishy odor and taste. It is insoluble in water, slightly soluble in alcohol and soluble in chloroform, ether, benzene, ethyl acetate and carbon disulfide. The specific gravity is from 0.917 to 0.923 at 25 C. The refractive index is from 1.475 to 1.480 at 20 C.

A solution of one drop of the oil in 1 cc. of chloroform, when shaken with one drop of sulfuric acid, acquires a light violet color, changing to purple and finally brown or blue. Transfer 5 cc. of oil to a centrifuge tube and add 5 cc. of benzene; centrifugate for twenty-five minutes at 25 C.: no precipitate forms and a clear solution remains.

Fill a tall, cylindric, standard oil-sample bottle of about 120 cc. capacity with shark liver oil and immerse in a water bath at about 10 C.: the oil becomes turbid at about 15 C. but fluid and clear when the bath is warmed to 45 C.

Transfer 2 Gm. of shark liver oil, accurately weighed, to an Erlenmeyer flask and dissolve in 20 cc. of a mixture of equal volumes of alcohol and ether, which previously has been neutralized with tenth-normal sodium hydroxide, using five drops of phenolphthalein T. S. as indicator, and titrate with tenth-normal sodium hydroxide to the production of a pink color which persists for fifteen seconds; not more than 1 cc. of tenth-normal sodium hydroxide is required *(free acid)*. The amount of unsaponifiable matter as determined by the method of the U. S. P. XI, page 446, is not less than 3.0 per cent nor more than 6.0 per cent. The saponification value as determined by the method of the U. S. P. XI, p. 445, is not less than 170 nor more than 187. The iodine value as determined by the method of the U. S. P. XI, page 445, on from 0.18 to 0.20 Gm. of sample, accurately weighed, is not less than 125 nor more than 145.

Shark Liver Oil-Shark Industries.—A brand of shark liver oil-N. N. R.

Manufactured by Shark Industries, Inc., Hollywood, Fla. No U. S. patent or trademark.

Capsules Shark Liver Oil, 8.1 minims: Each capsule contains not less than 7,500 U. S. P. units of vitamin A and not less than 18 U. S. P. units of vitamin D.

DIGILANID.—A mixture of the isomorphous crystallized cardio-active glucosides lanatosid-A ($C_{49}H_{78}O_{19}$), lanatosid-B ($C_{49}H_{76}O_{20}$) and lanatosid-C ($C_{49}H_{76}O_{20}$), obtained from the leaves of Digitalis lanata. The three components are present in the mixture in the proportions in which they occur in the crude drug, namely about 47 per cent lanatosid-A, 16 per cent lanatosid-B and 37 per cent lanatosid-C.

Actions and Uses.—The actions and uses are closely similar to those of digitalis U. S. P.

Dosage.—The average oral daily dose is from two to four tablets or from 2 to 4 cc. of the liquid until the therapeutic effects are induced or until minor toxic symptoms appear, after which a maintenance dose of about half that just given will usually be sufficient. For rectal administration, one or two suppositories daily. Urgent cases sometimes require the administration of larger oral doses or the intramuscular or intravenous injection of suitable doses. These demand the careful observation of the proper technic, which is described in the circular which accompanies the package.

Manufactured by Sandoz Chemical Works, Inc., New York. U. S. patents 1,923,490 (Feb. 19, 1931; expires 1948) and 1,923,491, (Aug. 22, 1931; expires 1948). U. S. trademark 291,301.

Ampules Digilanid 2 cc. (For Intramuscular Use): Each ampule contains 0.4 mg. of digilanid, equivalent to 1.2 cat units.

Ampules Digilanid 4 cc. (For Intravenous Use): Each ampule contains 0.8 mg. of digilanid, equivalent to 2.4 cat units.

Suppositories Digilanid 0.5 mg.: Each suppository contains 1.5 cat units.

Tablets Digilanid 0.33 mg.: Each tablet contains 1 cat unit.

Vials Digilanid 30 cc.: Each cubic centimeter (16 minims) contains 0.33 mg. of digilanid, equivalent to 1 cat unit.

The dry leaves of Digitalis lanata are ground with ammonium sulfate, wetted with water and extracted with ethyl acetate. The filtered extract is evaporated to dryness in vacuo, treated with ether and allowed to stand until the mass becomes solid. The ether is poured off and the residue digested with ether. The dried residue from the operation is pulverized, dissolved in methyl alcohol and treated with lead hydroxide in water. The resultant mixture is neutralized and filtered; the filtrate is concentrated in vacuo and the precipitated glucosidal mixture filtered. The residue is recrystallized from methyl alcohol and water mixtures.

Digilanid crystallizes from aqueous methanol solutions in flat prisms which contain 6 per cent (2 mol.) of methanol and 3.5 per cent (2 mol.) of water as solvents of crystallization. When dried in a high vacuum at 90 C., these solvents are lost. On standing, the dried material takes up approximately 7 per cent of moisture; the dosage of the product is based on this hydrated form.

Air dried digilanid occurs as a white, odorless powder, possessing a bitter taste; soluble in methanol, 1 in 20, very slightly soluble in water, 1 in 10,000 and insoluble in ether. Digilanid, when heated rapidly, melts with decomposition above 245 C.

Transfer 0.002 Gm. of digilanid to a 15 cm. test tube and add 4 cc. of glacial acetic acid and one drop of ferric chloride solution. Add from a pipet 4 cc. of sulfuric acid to underlay the acetic acid solution and allow to stand one hour: a blue color appears in the upper zone *(digitoxose)* and a violet-brown in the lower zone *(mixture of aglucones).* Transfer about 0.02 Gm. of digilanid to a 10 cm. test tube and add 1 cc. each of water, methanol and lead acetate solution: no immediate precipitation or coloration occurs *(appreciable amounts of tannoid substances).* Transfer about 0.02 Gm. of digilanid to a test tube and add 2 cc. of methanol, 2 cc. of water and 0.5 cc. of alkaline cupric tartrate solution, and heat for ten seconds: no turbidity appears *(free reducing sugars).*

Transfer about 0.2 Gm. of digilanid, dried under vacuum and accurately weighed, to a 10 cc. volumetric flask and make up to volume with ethanol. Mix, transfer to a 2 dcm. polarizing tube and observe the angular rotation, using sodium light at 25 C.: the specific rotation $[\alpha]_D^{25}$ is not less than + 32.0 and not more than + 33.8.

Transfer about 0.2 Gm. of digilanid, dried under vacuum and accurately weighed, to a 150 cc. glass stoppered Erlenmeyer flask and cautiously add 40 cc. of methanol and 20 cc. of tenth-normal sodium hydroxide. Stopper the flask and allow to stand seventy-two hours. To a similar flask add 40 cc. of ethanol and 20 cc. of tenth-normal sodium hydroxide, stopper and allow to stand seventy-two hours. Titrate both solutions with tenth-normal hydrochloric acid, using phenolphthalein as indicator: the volume of tenth-normal sodium hydroxide required by 1 Gm. of digilanid is not less than 20.0 and not more than 23.0 cc.

Transfer about 0.2 Gm. of digilanid, dried under vacuum and accurately weighed, to a 250 cc. separator, add 100 cc. of chloroform, 20 cc. of methanol and 100 cc. of water, and shake at 25 C. for one minute. Separate the layers and evaporate each in vacuo to dryness. Wash the residues into tared weighing bottles with methanol and again evaporate to dryness in vacuo at 55 C., and weigh: the weight of the residue from the chloroform divided by the sum of the weights of the residues is not less than 0.60 and not more than 0.63.

STAPHYLOCOCCUS ANTITOXIN.—Antitoxin prepared by immunizing horses with staphylococcus toxoid and/or staphylococcus toxin.

Actions and Uses.—Staphylococcus antitoxin is suggested in the treatment of acute and severe staphylococcic infections with or without septicemia. Its use in treatment calls for adequate dosage administered early: most of the antitoxin estimated to be necessary for the entire treatment of the infection should be injected during the first few hours after decision is made to use the serum. Supplementing the use of antitoxin in the more severe types of staphylococcic infections, surgical drainage of accessible foci and transfusions with normal or immune donors should be a part of the treatment.

Dosage.—For the treatment of localized infections, 10,000 units. For the treatment of more severe infections, from 30,000 to 100,000 units early during the first day in divided doses, followed by from 20,000 to 100,000 units daily until the pulse rate and temperature have subsided and the blood cultures are sterile for three consecutive days.

Lederle Laboratories, Inc., Pearl River, N. Y.

Staphylococcus Antitoxin "Globulin-Lederle-Modified."—An antitoxic serum prepared by immunizing horses with gradually increasing doses of staphylococcus toxoid and/or staphylococcus toxin. The serum is refined by a controlled method of selective digestion of the proteins of the immune horse blood with pepsin which digests up to 90 per cent of the coagulable protein; a smaller portion is precipitated and the remainder, a pseudoglobulin fraction, is purified first by ordinary filtration and then by ultrafiltration and dialysis. The serum is standardized on the basis of the international unit which was adopted by the Permanent Commission on Biological Standardization of the Health Organization of the League of Nations in August 1934, the unit being equivalent to approximately 125 original antidermonecrotic units, an antidermonecrotic unit being that amount of antitoxin required to neutralize one necrotizing dose of staphylococcus toxin. Marketed in packages of one vial containing 10,000 international units and in packages of one vial containing 20,000 international units.

CROTALUS ANTITOXIN (See New and Nonofficial Remedies, 1940, p. 419).

Mulford Biological Laboratories, Sharp & Dohme, Philadelphia and Baltimore.

"Lyovac" Antivenin (Nearctic Crotalidae) Polyvalent.—North American Anti-Snake-Bite Serum.—A lyophilized antitoxic serum prepared by injecting horses with venoms from serpents of the North American species of the family Crotalidae (rattle-snake venoms, 90 per cent; moccasin venoms, 10 per cent. Moccasin venoms include both the cotton-mouth moccasin and the upland moccasin or copperhead). The bulk globulin before lyophilization is tested for sterility. The following safety test is made: 3 cc. of the finished antivenin is injected into each of two guinea pigs. Both animals must remain healthy for at least seven days. The total solids content must not exceed 20 per cent. The product is standardized for potency so that 1 cc. of the antivenin will neutralize 20 minimum lethal doses of venom injected intravenously into 350 Gm. pigeons. With standard rattlesnake venom (Crotalus atrox), the amount neutralized by 1 cc. of antivenin equals 3 mg. of the dried venom.

The process of lyophilization consists in the following: The antivenin in specially designed final containers is rapidly frozen by immersion in a freezing mixture to convert the substance with the least molecular rearrangement. The container is then subjected to a high vacuum to accomplish dehydration which is continued until the residual moisture content is less than 1 per cent.

Marketed in packages of one ampule-vial containing a sufficient amount of lyophilized antivenin to yield 10 cc. of refined and concentrated globulin with one syringe containing 10 cc. of distilled water (preserved with phenol 0.35 per cent) and a 1 cc. ampule-vial of normal horse serum (diluted 1:10) as test and desensitizing material.

IMMUNE GLOBULIN (HUMAN) (See New and Nonofficial Remedies, 1940, p. 437).

The Gilliland Laboratories, Inc., Marietta, Ga.

Immune Globulin (Human).—Human placentas from healthy mothers are extracted in sodium chloride solution. After extraction the centrifuged supernatant is refined and concentrated with ammonium sulfate in a manner similar to that used for diphtheria antitoxin. The resulting concentrate is dialyzed to remove sulfates and is preserved with 0.1 per cent of phenol and 0.01 per cent of sodium ethyl-mercuri-thiosalicylate and passed through a bacteriologic filter. The product is standardized by assay in guinea pigs of the diphtheria antitoxin content. Marketed in packages of 2 cc. and 10 cc. vials.

SULFANILAMIDE (See New and Nonofficial Remedies, 1940, p. 489).

The following dosage form has been accepted:

Sulfanilamide Tablets, 7½ grains.
Prepared by Sharp & Dohme, Philadelphia and Baltimore. No U. S. patent or trademark.

ANTIPNEUMOCOCCUS SERUM TYPES I AND II COMBINED (See New and Nonofficial Remedies, 1940, p. 432).

Mulford Biological Laboratories, Sharp & Dohme, Inc., Philadelphia and Baltimore.

Antipneumococcic Serum, Concentrated (Pneumococcus Antibody Globulin, Types I and II)-Mulford.—(See New and Nonofficial Remedies, 1940, p. 433): Also marketed in packages of one ampule vial containing 20,000 units each of types I and II, and in packages of one ampule vial containing 50,000 units each of types I and II.

CAFFEINE WITH SODIUM BENZOATE (See New and Nonofficial Remedies, 1940, p. 168).

The following dosage form has been accepted:

Endo Products, Inc., Richmond Hill, New York.

Ampoules Caffeine with Sodium Benzoate, 2 cc.: An aqueous solution containing in each 2 cc. caffeine with sodium benzoate-U. S. P. 0.5 Gm. (7½ grains).

SULFAPYRIDINE (See New and Nonofficial Remedies, 1940, p. 494).

Sulfapyridine-Wyeth.—A brand of sulfapyridine-N. N. R.

Manufactured by John Wyeth & Brother, Inc., Philadelphia. No U. S. patent or trademark.
Tablets Sulfapyridine-Wyeth, 0.5 Gm. (7.7 grains).

MEDICAL EDUCATION IN THE UNITED STATES AND CANADA

FORTIETH ANNUAL PRESENTATION OF EDUCATIONAL DATA BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

TABLE OF CONTENTS

	Page
MEDICAL SCHOOLS	
Preliminary Education	685
Duration of Medical Course	689
Medical School Survey	689
Developments in Medical Education	692
Curriculum	692
Approval of Schools in Canada	692
MEDICAL STUDENTS	
Statistics of Medical Schools	693
Birth Place of Students	694
Resident and Nonresident Students	694
Schools, Students and Graduates by States	696
Required Internships	696
Distribution by Sex	697
Women in Medicine	697
Part Time, Special and Graduate Students	698
Schools, Students and Graduates, 1905-1940	699
Graduates with Baccalaureate Degrees	699
B.S. in Medicine Degree	700
Students by Classes, 1930-1939	700
Students Leaving School	700
Fees	700
Citizens of the United States in Faculties of Medicine Abroad	701
Description of Medical Schools	701
Description of Schools of the Basic Medical Sciences	708
CONTINUATION STUDY FOR PRACTICING PHYSICIANS IN THE UNITED STATES	
Organization and Administration	709
Methods of Instruction	709
Registration	713
Financial Support	713
Clinical Conferences, Graduate Assemblies and Study Courses	713
Summary	713
Foundations and Funds	720
Opportunities for Negro Physicians	720
Scientific Associations	720
Miscellaneous	720
PRINCIPLES REGARDING GRADUATE MEDICAL SCHOOLS	725
APPROVED EXAMINING BOARDS IN MEDICAL SPECIALTIES	
American Board of Anesthesiology	726
American Board of Dermatology and Syphilology	727
American Board of Internal Medicine	729
American Board of Obstetrics and Gynecology	730
American Board of Ophthalmology	733
American Bd. of Orthopaedic Surgery	735
American Board of Otolaryngology	736
American Board of Pathology	737
American Board of Pediatrics	738
American Board of Psychiatry and Neurology	739
American Board of Radiology	741
American Board of Surgery	743
American Board of Urology	744
American Board of Plastic Surgery	747
American Bd. of Neurological Surgery	748
HOSPITALS APPROVED FOR TRAINING INTERNS	752
APPROVED RESIDENCIES AND FELLOWSHIPS	763

Data pertaining to the major activities of the Council are presented annually in the Educational Number of THE JOURNAL. In the following pages will be found the usual report on preliminary and undergraduate medical education with a description of the approved medical schools and revised lists of hospitals approved for the training of interns and approved for residencies and fellowships in the specialties. A summary of the activities of the various agencies interested in continuation courses for practicing physicians is here given, as well as the Principles Regarding Graduate Medical Schools ratified by the House of Delegates of the American Medical Association at its recent New York session. Finally there are included the official requirements of each of the fifteen approved examining boards in medical specialties.

This issue of THE JOURNAL constitutes a valuable source of information for students, interns, residents and practicing physicians as well as those interested in specialty certification. It may equally interest deans and other officials of medical schools, licensing agencies, the directors and staffs of hospitals, and the various general and special societies interested in the promotion of graduate and postgraduate medical education.

These data are based on official reports. The Council and THE JOURNAL express thanks and appreciation to the officials of the institutions and agencies named and to others for their cordial cooperation in supplying the material submitted in this presentation and for other records furnished throughout the year to the office of the Council and the members of its staff on inspection or visitation, enabling the Council to maintain its medical student and hospital registers efficiently and to carry on its activities as outlined by the House of Delegates of the American Medical Association.

PRELIMINARY EDUCATION

The Council's minimum requirement for admission to approved medical schools is two years of college training which include English, and theoretical and practical courses in physics, biology and general and organic chemistry. Three years or more in college is, however, recommended. Since it cannot be generally assumed that all who have satisfied these requirements in terms of hourly credits are fitted for the study of medicine, qualitative standards also are imposed.

As a rule applicants receive their preliminary education in institutions approved by accrediting agencies. Exception may be made in the case of those who demonstrate superior ability. For the convenience of students and admitting officers the Council publishes annually a list of colleges of arts and sciences approved by the following national and regional educational associations:

Association of American Universities.
North Central Association of Colleges and Secondary Schools.
Middle States Association of Colleges and Secondary Schools.
New England Association of Colleges and Secondary Schools.
Southern Association of Colleges and Secondary Schools.
Northwest Association of Secondary and Higher Schools.

TABLE 1.—*Requirements for Admission to Medical Schools, 1936-1940*

		Years				
	Degree	Four	Three*	Three	Two and One-Half	Two
1936-1937	4	1	3	36	1	32
1937-1938	5	1	4	39	1	27
1938-1939	5	1	5	45	2	19
1939-1940	5	1	5	55	..	11
1940-1941	6	1	5	56	..	9

* Baccalaureate degree conferred in absentia at end of first medical year.

At a meeting of the Council on Medical Education and Hospitals, Dec. 10, 1939, it was voted to omit the names of approved junior colleges from its compilation. This action was taken because the Council

(Continued on page 688)

TABLE 2.—*Statistics of Recognized Medical Schools in the United States and Canada*

Name and Location of School	1940-1941 Preliminary Requirement by Years	Length of Course, Academic Years	Students by Classes, Session 1939-1940: 1st Year	2d Year	3d Year	4th Year	5th Year or Intern Year	Totals	Graduates Since July 1, 1939	Session 1940-1941: Begins 1940	Session 1940-1941: Ends 1941	Applications for Admission to the 1st Year Will Be Received Until	Executive Officer	
ARKANSAS														
1 *University of Arkansas School of Medicine, Little Rock	2	4	82	63	70	63	..	278	63	Sept. 25	June 10	Aug.	Stuart P. Cromer, M.D., Dean	1
CALIFORNIA														
2 University of California Medical School, Berkeley-San Francisco	3	5	63	60	62	56	58†	241	60	Aug. 26	May 24	Jan.	President Robert G. Sproul, LL.D., Acting Dean	2
3 College of Medical Evangelists, Loma Linda-Los Angeles	2	5	75	74	78	89	93†	316	101	Sept. 2	June 1	May	E. H. Risley, M.D., Dean, Loma Linda; W. E. Macpherson, M.D., Assoc. Dean, Los Angeles	3
4 University of Southern California School of Medicine, Los Angeles	3	5	54	50	50	48	44†	202	43	Sept. 16	June 7	March	Paul S. McKibben, Ph.D., Dean	4
5 Stanford University School of Medicine, Stanford University-San Francisco	3	5	60	60	60	60	56†	240	55	Sept. 24	June 15	April	Loren Roscoe Chandler, M.D., Dean	5
COLORADO														
6 University of Colorado School of Medicine, Denver	3	4	56	47	50	51	..	204	51	Sept. 23‖	June 9	April	Maurice H. Rees, M.D., Dean	6
CONNECTICUT														
7 Yale University School of Medicine, New Haven	3	4	54	59	50	45	..	208	44	Sept. 23	June 11	March	Francis G. Blake, M.D., Acting Dean	7
DISTRICT OF COLUMBIA														
8 Georgetown University School of Medicine, Washington	Degree	4	77	92	77	80	..	326	80	Sept. 23	June 1	March	David V. McCauley, S.J., Ph.D., Dean	8
9 George Washington University School of Medicine, Washington	2	4	74	68	57	49	..	248	48	Sept. 23	June 11	.....	Walter A. Bloedorn, M.D., Dean	9
10 Howard University College of Medicine, Washington	2	4	26	36	24	33	..	119	33	Sept. 23	June 13	Sept.	Numa P. G. Adams, M.D., Dean	10
GEORGIA														
11 Emory University School of Medicine, Atlanta	3	4	64	51	54	50	..	219	50	Sept. 26	June 9	March	Russell H. Oppenheimer, M.D., Dean	11
12 University of Georgia School of Medicine, Augusta	3	4	50	48	36	32	..	166	33	Sept. 26	June 9	May	G. Lombard Kelly, M.D., Dean	12
ILLINOIS														
13 Loyola University School of Medicine, Chicago	3	5	80	66	59	97	121†	302	115	Sept. 16	June 11	.....	Louis D. Moorhead, M.D., Dean	13
14 Northwestern University Medical School, Chicago	3	5	133	120	158	145	145†	556	156	Oct. 1¶	June 14	March	Irving S. Cutter, M.D., Dean	14
15 University of Chicago, Rush Medical College	3	4	...	...	...	...	...	212**	106	Sept. 30	June 11	.....	Earle Gray, M.D., Acting Dean	15
16 University of Chicago, The School of Medicine	3	4	...	...	...	...	...	273**	35	Sept. 30¶	June 11	Feb.	W. H. Taliaferro, Ph.D., Dean, Div. Biological Sciences; Victor Johnson, M.D., Dean Med. Stud.	16
17 University of Illinois College of Medicine, Chicago	3	5	171	159	147	159	174†	636	162	Sept. 23	June 6	July	David J. Davis, M.D., Dean	17
INDIANA														
18 Indiana University School of Medicine, Bloomington-Indianapolis	3	4	132	117	102	109	..	460	105	Sept. 14	June 2	May	Willis D. Gatch, M.D., Dean	18
IOWA														
19 State University of Iowa College of Medicine, Iowa City	3	4	87	54	81	71	..	293	71	Sept. 26	June 2	July	Ewen Murchison MacEwen, M.D., Dean	19
KANSAS														
20 University of Kansas School of Medicine, Lawrence-Kansas City	3	4	85	70	70	69	..	294	69	Sept. 19	June 9	June	H. R. Wahl, M.D., Dean	20
KENTUCKY														
21 University of Louisville School of Medicine, Louisville	3	4	93	74	90	84	..	341	84	Sept. 23	May 31	April	John Walker Moore, M.D., Dean	21
LOUISIANA														
22 Louisiana State University School of Medicine, New Orleans	3	4	103	103	75	70	64‡	351	136	Sept. 9	May 31	.....	B. I. Burns, M.D., Dean	22
23 Tulane University of Louisiana School of Medicine, New Orleans	3	4	124	109	116	122	..	471	120	Sept. 26	June 11	.....	Maxwell E. Lapham, M.D., Dean	23
MARYLAND														
24 Johns Hopkins University School of Medicine, Baltimore	Degree	4	71	70	72	66	..	279	68	Sept. 24	June 3	June	Alan M. Chesney, M.D., Dean	24
25 University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore	3	4	95	83	92	100	..	370	100	Sept. 26	June 7	Sept.	H. Boyd Wylie, M.D., Acting Dean	25
MASSACHUSETTS														
26 Boston University School of Medicine, Boston	3	4	64	53	34	54	..	205	54	Sept. 26	June 16	April	Alexander S. Begg, M.D., Dean	26
27 Harvard Medical School Boston	2	4	128	123	137	134	..	522	132	Sept. 23	June 19	March	C. Sidney Burwell, M.D., Dean	27
28 Tufts College Medical School, Boston	Degree	4	105	93	90	98	..	386	96	Sept. 18	June 15	Sept.	A. Warren Stearns, M.D., Dean	28
MICHIGAN														
29 University of Michigan Medical School, Ann Arbor	3	4	120	101	121	124	..	466	125	Sept. 30	June 21	March	A. C. Furstenberg, M.D., Dean	29
30 Wayne University College of Medicine, Detroit	3 & Degree	5	65	65	56	59	61†	245	60	Sept. 16	June 14	Feb.	Edgar H. Norris, M.D., Dean	30
MINNESOTA														
31 University of Minnesota Medical School, Minneapolis	3	5	120	107	108	119	135†	454	104	Sept. 30¶	June 14	Jan.	Harold S. Diehl, M.D., Dean	31
MISSOURI														
32 St. Louis University School of Medicine, St. Louis	3	4	110	96	106	106	..	418	106	Sept. 24	June 1	Sept.	Alphonse M. Schwitalla, S.J., Ph.D., Dean	32
33 Washington University School of Medicine, St. Louis	4	4	82	72	94	97	..	345	95	Sept. 26	June 10	Sept.	Philip A. Shaffer, Ph.D., Dean	33

	NEBRASKA														
34	Creighton University School of Medicine, Omaha	3	4	69	51	63	57	..	231	57	Sept. 24	June 5	June	Charles M. Wilhelmj, M.D., Dean	34
35	University of Nebraska College of Medicine, Omaha	3	4	95	71	77	77	..	320	76	Sept. 23	June 9	June	C. W. M. Poynter, M.D., Dean	35
	NEW YORK														
36	Albany Medical College, Albany	Degree	4	37	32	30	29	..	128	29	Sept. 9	June 9	Sept.	R. S. Cunningham, M.D., Dean	36
37	Long Island College of Medicine, Brooklyn	3	4	97	90	86	81	..	354	81	Sept. 23	June 7	Sept.	Jean A. Curran, M.D., Dean	37
38	University of Buffalo School of Medicine, Buffalo	2	4	71	64	66	58	..	259	56	Sept. 30	June 7	March	Edward W. Koch, M.D., Dean	38
39	Columbia University College of Physicians and Surgeons, New York	3	4	107	97	106	103	..	413	102	Sept. 19	June 3	Feb.	Willard C. Rappleye, M.D., Dean	39
40	Cornell University Medical College, New York	3 & Degree	4	80	75	66	71	..	292	70	Sept. 17	June 11	.....	William S. Ladd, M.D., Dean	40
41	New York Medical College, Flower and Fifth Avenue Hospitals, New York	Degree	4	81	81	67	49	..	278	50	Sept. 16	June 6	.....	Claude A. Burrett, M.D., President	41
42	New York University College of Medicine, New York	3	4	125	122	125	123	..	495	124	Sept. 18	June 11	Jan.	Currier McEwen, M.D., Dean	42
43	University of Rochester School of Medicine and Dentistry, Rochester	3	4	57	50	48	45	..	200	45	Sept. 16	June 14	March	George H. Whipple, M.D., Dean	43
44	Syracuse University College of Medicine, Syracuse	3	4	49	37	44	40	..	170	40	Sept. 16	June 2	.....	H. G. Weiskotten, M.D., Dean	44
	NORTH CAROLINA														
45	Duke University School of Medicine, Durham	2	4	66	67	71	55	††	259	58	Oct. 3	June 6	April	Wilburt C. Davison, M.D. Dean	45
	OHIO														
46	University of Cincinnati College of Medicine, Cincinnati	3	5	80	71	76	76	65†	303	66	Sept. 20	June 6	March	Stanley Dorst, M.D., Dean	46
47	Western Reserve University School of Medicine, Cleveland	3 & Degree	4	76	68	63	58	..	265	58	Sept. 19	June 11	Sept.	Torald Sollmann, M.D., Dean	47
48	Ohio State University College of Medicine, Columbus	3	4	76	85	69	77	..	307	77	Oct. 1	June 16	June	John H. J. Upham, M.D., Dean	48
	OKLAHOMA														
49	University of Oklahoma School of Medicine, Oklahoma City	3	4	67	58	54	52	..	231	52	Sept. 16	June 9	Aug.	Robert U. Patterson, M.D., Dean	49
	OREGON														
50	University of Oregon Medical School, Portland	3	4	69	56	65	50	..	240	49	Oct. 1	June 10	March	Richard B. Dillehunt, M.D., Dean	50
	PENNSYLVANIA														
51	Hahnemann Medical College and Hospital of Philadelphia	3	4	149	135	130	129	..	543	127	Sept. 30	June 12	Sept.	William A. Pearson, M.D., Dean	51
52	Jefferson Medical College of Philadelphia	Degree	4	134	117	120	126	..	497	125	Sept. 18	June 6	.....	Henry K. Mohler, M.D., Dean	52
53	Temple University School of Medicine, Philadelphia	3	4	111	96	118	119	..	446	119	Sept. 18	June 12	Sept.	William N. Parkinson, M.D., Dean	53
54	University of Pennsylvania School of Medicine, Philadelphia	3	4	120	106	128	137	..	491	134	Sept. 23	June 11	March	William Pepper, M.D., Dean	54
55	Woman's Medical College of Pennsylvania, Philadelphia	3	4	34	26	25	18	..	103	18	Sept. 18	June 11	Aug.	Catharine Macfarlane, M.D., Interim Dean	55
56	University of Pittsburgh School of Medicine, Pittsburgh	2	4	83	74	54	46	..	257	46	Sept. 23	June 11	March	William S. McElroy, M.D., Dean	56
	SOUTH CAROLINA														
57	Medical College of the State of South Carolina, Charleston	3	4	44	41	45	41	..	171	40	Sept. 26	June 5	March	Robert Wilson, M.D., Dean	57
	TENNESSEE														
58	University of Tennessee College of Medicine, Memphis	2	4	142	87	114	96	..	439	96	July 5¶	June 7	.....	O. W. Hyman, Ph.D., Dean	58
59	Meharry Medical College, Nashville	3	4	58	51	48	39	..	196	39	Oct. 1	May 27	March	Edward L. Turner, M.D., Dean	59
60	Vanderbilt University School of Medicine, Nashville	3 & Degree	4	51	46	51	52	..	200	54	Sept. 23	June 11	.....	Waller S. Leathers, M.D., Dean	60
	TEXAS														
61	Baylor University College of Medicine, Dallas	3	4	84	75	71	75	..	305	75	Sept. 30	June 2	.....	Walter H. Moursund, M.D., Dean	61
62	University of Texas School of Medicine, Galveston	3	4	106	94	87	87	..	374	90	Oct. 1	May 31	June	John W. Spies, M.D., Dean	62
	VERMONT														
63	University of Vermont College of Medicine, Burlington	3	4	32	32	31	36	..	131	36	Sept. 18	June 16	May	Hardy A. Kemp, M.D., Dean	63
	VIRGINIA														
64	University of Virginia Department of Medicine, Charlottesville	3	4	72	64	53	65	..	254	62	Sept. 12	June 9	May	Harvey E. Jordan, Ph.D., Dean	64
65	Medical College of Virginia, Richmond	3	4	80	76	72	67	..	295	66	Sept. 3	June 3	.....	Lee E. Sutton, Jr., M.D., Dean	65
	WISCONSIN														
66	University of Wisconsin Medical School, Madison	3	4	89	72	52	49	..	262	48	Sept. 25	June 23	March	William S. Middleton, M.D., Dean	66
67	Marquette University School of Medicine, Milwaukee	3	5	91	80	70	72	72‡	313	72	Sept. 30	June 11	.....	Eben J. Carey, M.D., Dean	67
	CANADA														
68	University of Alberta Faculty of Medicine, Edmonton, Alta	1	6	38	40	34	43	42#	233	35	Sept. 24	May 13	Aug.	John James Ower, M.D., Acting Dean	68
69	University of Manitoba Faculty of Medicine, Winnipeg, Man	2	5	58	49	50	61	46†	218	45	Sept. 20	May 14	April	A. T. Mathers, M.D., Dean	69
70	Dalhousie University Faculty of Medicine, Halifax, N. S	2	5	50	48	40	45	57†	183	35	Sept. 10	May 13	.....	H. G. Grant, M.D., Dean	70
71	Queen's University Faculty of Medicine, Kingston, Ont	1	6	42	45	46	42	45#	278	62	Sept. 26	May 16	Aug.	Frederick Etherington, M.D., Dean	71
72	University of Western Ontario Medical School, London, Ont	1	6	58	38	31	37	30#	223	31	Sept. 16	May 17	Aug.	F. J. H. Campbell, M.D., Dean	72
73	University of Toronto Faculty of Medicine, Toronto, Ont	1	6	148	125	117	118	137#	777	138	Sept. 24	May 17	Sept.	W. E. Gallie, M.D., Dean	73
74	McGill University Faculty of Medicine, Montreal, Que	3	4	97	94	90	87	76§	444	161	Sept. 4	May 31	March	J. C. Simpson, LL.D., Dean	74
75	University of Montreal Faculty of Medicine, Montreal, Que	Degree	5	51	49	50	55	49†	205	48	Sept. 15	June 15	Sept.	Albert LeSage, M.D., Dean	75
76	Laval University Faculty of Medicine, Quebec, Que	Degree	5	85	46	68	57	58	314	51	Sept. 11	May 30	.....	Rev. Aimé Labrie, Secretary-General, U. Laval.	76

Statistics of Recognized Schools of the Basic Medical Sciences will be found in table 3, page 688.

* On probation since Dec. 4, 1938.

** Enrolment not on above table by classes for the two medical schools of the University of Chicago.

† Fifth year (internship) enrolment not included in the total column.

‡ Fifth year discontinued beginning with the class of 1940.

†† Two year internship required after graduation; 1st year, 64; 2d year, 54.

Sixth year enrolment: Alberta, 36; Queen's, 58; Western Ontario, 29; Toronto, 132.

§ Fifth year discontinued beginning with the class of 1940; one year internship required to be eligible for licensing examinations.

¶ Students admitted at different times of the year: Colorado, advanced students beginning of 2d or 3d quarters; Northwestern, beginning of any quarter; University of Chicago, spring and summer quarters; Minnesota, winter quarter (freshmen only); Tennessee, Sept. 23, Dec. 30, 1940, and March 20, 1941.

(Continued from page 685)

itself recommends three years of college preliminary to entrance into medical school and because all but a negligible percentage of medical students have actually taken three years or more in college. Under these conditions the medical schools are selecting their students from among those candidates who are already enrolled in colleges of arts and sciences which offer the full four year course leading to a bachelors' degree. One hundred and thirty-three junior colleges were included in the last published list.

There are 671 colleges of arts and sciences, exclusive of junior colleges, approved by the standardizing agencies, distributed as follows:

Association of American Universities	291
North Central	249
Southern	180
Middle States	124
Northwest	57
New England	44

Of those recognized by the Association of American Universities, all but seventeen are approved also by their district agency. In the various groups this dual approval of 274 institutions is apportioned as follows:

North Central	103
Southern	59
Middle states	63
New England	31
Northwest	18

The five regional associations of colleges referred to cover among them the entire United States with the exception of the far Southwest. Institutions in this area can secure only the approval of the national group—the Association of American Universities.

For the session 1939-1940, sixty-six of the seventy-seven medical schools in the United States had a premedical prerequisite in excess of the minimum. For 1940-1941 only nine schools will admit students with less than three years of preparation. In table 1 are tabulated for five sessions the figures indicating the trend toward increasing admission requirements with the number of schools requiring a degree, four years, three years if the baccalaureate degree is conferred in absentia at the end of the first year in medicine, three years, two and one-half years and two years. The nine schools which have a stated two year requirement for the session 1940-1941 are the Universities of Arkansas, Medical Evangelists, George Washington, Howard, Louisville, Harvard, Buffalo, Pittsburgh and Tennessee. Creighton University School of Medicine and Meharry Medical College have increased their prerequisite for the forthcoming session to three years.

The general trend toward three or more years of college work would appear to be due to a desire for more thorough grounding in all the branches of chemistry and greater familiarity with nonscience subjects, such as literature, history or economics. In table 4 it will be noted that actually only 2 per cent of the entire freshman class of 1939-1940 were admitted with less than three years. Of the eleven schools with a two year requirement, two admitted none on this basis, two admitted one each, two admitted three each and one accepted nine students. One hundred entered four schools, although in each case they represent less than 50 per cent of the freshman class. In 1936-1937, 12.5 per cent of the entering class had only the minimum of preliminary education, but by 1938-1939 the number had dropped to 3.8 per cent and in 1939-1940 to 2.0 per cent.

The faculties of medicine in Canada vary in their premedical requirement. For the session 1940-1941 two require a degree for admission to a five year course; four have a six year medical course preceded by senior matriculation which is equivalent to the work of the first year in a college of arts and three, including one school offering courses in the basic sciences, require two years, and one school requires three years before beginning a four year course. A table appears later in this study which records the number of graduates of 1940 holding baccalaureate degrees (table 18).

With but five exceptions, namely California, Connecticut, Massachusetts, Missouri and Nebraska, the state licensing boards require two years of preliminary college training. The law in Massachusetts will change

TABLE 3.—*Statistics of Recognized Schools of the Basic Medical Sciences in the United States and Canada*

	Name and Location of School	1940-1941 Preliminary Requirement by Years	Length of Course Academic Years	Students by Classes, Session 1939-1940 1st Year	2d Year	Totals	Session 1940-1941 Begins	Ends	Applications for Admission to the 1st Year Will Be Received Until	Executive Officer	
	ALABAMA										
1	University of Alabama School of Medicine, University (Tuscaloosa)	3	2	53	50	103	Sept. 11	May 27	.....	Stuart Graves, M.D., Dean.....	1
	MISSISSIPPI										
2	University of Mississippi School of Medicine, University	3	2	23	21	44	Sept. 16	June 2	Aug.	B. S. Guyton, M.D., Dean.....	2
	MISSOURI										
3	University of Missouri School of Medicine, Columbia	3	2	41	34	75	Sept. 16	June 13	June	Dudley S. Conley, M.D., Dean....	3
	NEW HAMPSHIRE										
4	Dartmouth Medical School, Hanover	3 & Degree	2	20	22	42	Sept. 19	June 13	Feb.	John P. Bowler, M.D., Dean....	4
	NORTH CAROLINA										
5	University of North Carolina School of Medicine, Chapel Hill	3	2	42	37	79	Sept. 24	June 8	Sept.	W. Reese Berryhill, M.D., Acting Dean	5
6	Wake Forest College School of Medical Sciences, Wake Forest	3	2	33	27	60	Sept. 10	June 2	Sept.	C. C. Carpenter, M.D., Dean....	6
	NORTH DAKOTA										
7	*University of North Dakota School of Medicine, Grand Forks	3	2	25	24	49	Sept. 16	June 10	Sept.	H. E. French, M.D., Dean.....	7
	SOUTH DAKOTA										
8	*University of South Dakota School of Medical Sciences, Vermillion	3	2	26	24	50	Sept. 18	June 9	July	Joseph C. Ohlmacher, M.D., Dean	8
	UTAH										
9	University of Utah School of Medicine, Salt Lake City	3	2	30	26	56	Sept. 23	May 31	Feb.	L. L. Daines, M.D., Dean.....	9
	WEST VIRGINIA										
10	West Virginia University School of Medicine, Morgantown	3	2	25	20	45	Sept. 17	June 7	Sept.	Edward J. Van Liere, M.D., Dean	10
	CANADA										
11	University of Saskatchewan School of Medical Sciences, Saskatoon, Sask.	2	2	24	24	48	Sept. 23	May 9	May	W. S. Lindsay, M.B., Dean.....	11

* On probation since May 13, 1939.

in 1941. Although their statutes do not include the two year college requirement, these states with the exception of Massachusetts do not license other than graduates of approved schools. Alaska, Hawaii and Puerto Rico likewise require two years of preliminary training. The requirement of the medical licensing board of each state is shown in table 5.

DURATION OF MEDICAL COURSE

The medical course in the United States in general is taught in four years of approximately thirty-two weeks each. Fifty-two offer such a course. The medical schools of the Universities of Northwestern, Minnesota, Duke and Tennessee operate on the quarter system, permitting a student by utilizing the summer months to decrease the length of time necessary to obtain a degree. A considerable number of the students of these schools do not elect to study during the summer months. The medical schools of the University of Chicago are operated on a plan of individual promotion permitting a student to advance as rapidly as he desires, but the great majority complete the course in twelve quarters. Medical practice acts of certain states, however, specify a four year professional course and it is advisable that students should assure themselves concerning the legal interpretation of the phrase.

Fifty-six schools require a four year course, while eleven, including those operated on the quarter plan, require four years of systematic instruction followed by a fifth year spent as an intern or in research work.

Ten schools in the United States and one in Canada offer only the first two years of the medical curriculum and are designated as schools of the basic medical sciences. For the most part these schools are located in smaller communities where the clinical material required for teaching is almost wholly lacking. In some instances, facilities for the satisfactory teaching of such subjects as physical diagnosis and gross pathology must be sought at a distance from the school. Introductory courses in medicine and surgery, which commonly form a part of the second year schedule, may be similarly handicapped. A study of the problem led to the adoption in February 1937 of this policy, which became effective July 1, 1939. For these reasons the Council

TABLE 4.—*First Year Students Admitted with Less than Three Years of College Preparation*

	Number of Schools With Two Year Requirement	Percentage of Students
1936-1937	32	12.5
1937-1938	27	7.4
1938-1939	19	3.8
1939-1940	11	2.0

in giving its approval to schools of the basic medical sciences assumes no responsibility for the character of those courses which involve the use of clinical material.

Four of the medical schools of Canada offer a five year course, four have a six year course, one offers four years and there is one school of the basic sciences, referred to in the preceding paragraph. Three Canadian schools require an internship for graduation.

These data are shown in tables 2 and 3, listing separately:

1. Recognized medical schools in the United States and Canada.
2. Recognized schools of the basic medical sciences in the United States and Canada.

In subsequent tabulations the figures for the two groups are combined in an effort to present the picture of medical education as a whole.

MEDICAL SCHOOL SURVEY

During the academic years 1934-1936 a resurvey of all medical schools in the United States and Canada was made by the Council. Dr. Herman G. Weiskotten,

TABLE 5.—*Preliminary Training Required by Licensing Boards*

Two Years of College

Alabama	Louisiana	Oregon
Alaska	Maine	Pennsylvania
Arizona	Maryland	Puerto Rico
Arkansas	Michigan	Rhode Island
Colorado	Minnesota	South Carolina
Delaware	Mississippi	South Dakota
District of Columbia	Montana	Tennessee
Florida	Nevada	Texas
Georgia	New Hampshire	Utah
Hawaii	New Jersey	Vermont
Idaho	New Mexico	Virginia
Illinois	New York	Washington
Indiana	North Carolina	West Virginia
Iowa	North Dakota	Wisconsin
Kansas	Ohio	Wyoming
Kentucky	Oklahoma	

One Year of College

California	Connecticut

High School Graduation or Its Equivalent

Massachusetts	Missouri	Nebraska

dean of Syracuse University College of Medicine, visited all schools in company with a representative of the Council, the Association of American Medical Colleges or the Federation of State Medical Boards. Three days was customarily spent at each school. Some time before each school was visited, a set of questionnaires was sent including reports by the dean on the organization and administration of the school, the clinical facilities and hospital relationships, and each department in the school, including the library. These questionnaires called for information on departmental organization, staff, facilities, hours in the medical curriculum, methods of conducting courses, research, relationship with other departments, and budget. There was also provided a separate personal history form for every member of the faculty holding the rank of assistant professor and above. This called for an outline of training and experience, scientific society memberships, participation in scientific programs, publications, proportion of time devoted to teaching and research, and participation in community programs related to the field of medicine. The questionnaires were usually not examined before a school was visited, thus enabling those visiting the school to get a more objective picture. However, all questionnaires were carefully studied before an evaluation was made. Careful notes were kept of the inspections. All data dealing with the survey, including the questionnaires, notes on the visits, laboratory outlines, literature dealing with the conduct of courses, published reports and catalogues are filed in the office of the Council.

To all schools there was sent a confidential report in graphic form, referred to as a pattern map. This method, which had already proved its usefulness to the North Central Association of Colleges and Secondary Schools, was adapted by the Council to suit its own needs. The sixty-six four year medical schools in the United States, arranged in rank order with

(Continued on page 692)

TABLE 6.—*Birth Place*

Marginal Number		Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Marginal Number
1	University of Alabama School of Medicine	71	..	..	..	..	..	..	..	3	5	..	2	..	..	..	1	..	..	..	..	1	1
2	University of Arkansas School of Medicine	2	..	167	1	..	..	..	..	2	1	..	5	2	1	9	4	6	..	..	2	1	2
3	University of California Medical School	2	2	..	128	1	1	1	1	..	..	2	10	2	2	1	..	1	..	..	1	2	3
4	College of Medical Evangelists	1	4	1	50	12	1	..	5	5	2	5	12	4	6	2	3	2	..	5	4	8	4
5	Univ. of Southern California School of Medicine	..	4	1	72	7	..	1	..	..	..	..	9	4	6	2	..	..	..	..	1	5	5
6	Stanford University School of Medicine	1	1	1	130	3	2	..	1	..	..	2	7	1	2	2	..	..	..	..	2	2	6
7	University of Colorado School of Medicine	..	2	..	6	111	2	..	..	..	..	1	5	4	3	7	..	1	..	..	2	2	7
8	Yale University School of Medicine	..	..	..	8	3	42	..	..	1	2	..	4	..	..	2	1	..	7	..	27	3	8
9	Georgetown University School of Medicine	..	..	..	3	..	13	..	23	1	1	1	3	..	1	1	..	..	2	7	27	1	9
10	George Washington University School of Medicine	2	..	1	8	1	6	..	53	1	3	2	5	..	2	..	1	..	3	18	8	3	10
11	Howard University School of Medicine	3	1	2	..	..	2	1	10	1	8	..	2	1	1	1	2	2	..	9	2	1	11
12	Emory University School of Medicine	16	..	..	..	..	..	..	..	36	137	..	..	..	..	..	..	..	..	..	..	..	12
13	University of Georgia School of Medicine	4	..	..	..	..	..	..	..	2	141	..	..	..	1	..	..	..	..	1	..	1	13
14	Loyola University School of Medicine	..	..	1	8	1	..	7	..	1	..	..	144	12	9	..	..	..	2	..	2	14	14
15	Northwestern University Medical School	6	5	3	22	5	..	..	..	3	1	17	161	15	15	18	5	1	..	2	2	23	15
16	University of Chicago, Rush Medical College	4	..	1	2	1	1	..	..	2	..	8	37	2	3	4	1	..	..	1	2	4	16
17	University of Chicago, The School of Medicine	..	1	1	10	1	..	..	2	1	1	6	109	12	10	5	2	2	..	2	2	9	17
18	University of Illinois College of Medicine	1	..	..	1	..	1	..	..	..	..	..	502	10	8	2	2	1	..	..	3	7	18
19	Indiana University School of Medicine	..	1	..	..	..	..	..	..	..	..	..	2	447	..	..	..	..	..	..	..	..	19
20	State University of Iowa College of Medicine	..	..	..	1	2	..	..	..	1	..	..	10	2	225	1	..	..	..	..	2	2	20
21	University of Kansas School of Medicine	..	..	..	1	1	5	..	..	1	..	..	6	1	..	184	2	..	..	..	..	5	21
22	University of Louisville School of Medicine	4	1	2	2	1	3	..	..	..	1	3	8	28	2	1	146	..	..	1	2	2	22
23	Louisiana State University School of Medicine	9	..	5	3	1	..	..	1	6	5	..	7	1	3	..	7	188	1	..	1	2	23
24	Tulane University of Louisiana School of Medicine	48	6	9	2	1	..	..	1	46	11	..	..	..	..	2	15	111	..	..	1	1	24
25	Johns Hopkins University School of Medicine	3	1	..	9	2	6	..	5	4	4	..	8	2	3	3	4	2	6	52	15	4	25
26	University of Maryland School of Medicine	..	1	..	4	..	10	1	4	2	5	..	4	2	..	..	1	..	..	148	4	2	26
27	Boston University School of Medicine	..	..	..	1	..	8	..	..	..	..	..	..	2	1	..	1	..	19	1	125	..	27
28	Harvard Medical School	4	1	2	13	9	20	..	6	2	7	2	26	7	8	5	3	1	8	3	103	9	28
29	Tufts College Medical School	..	..	..	2	..	19	..	..	..	1	..	3	1	..	..	..	..	20	..	203	1	29
30	University of Michigan Medical School	2	1	..	5	3	3	..	1	2	3	2	22	12	6	4	1	1	1	..	7	242	30
31	Wayne University College of Medicine	1	1	..	1	1	2	..	..	..	..	..	5	3	5	..	1	..	..	..	6	150	31
32	University of Minnesota Medical School	..	2	..	2	2	..	..	..	1	..	2	8	2	7	2	..	1	..	..	2	4	32
33	University of Mississippi School of Medicine	2	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	33
34	University of Missouri School of Medicine	..	..	4	1	1	..	..	..	..	..	..	1	..	2	1	1	..	..	..	..	..	34
35	St. Louis University School of Medicine	..	1	2	21	2	4	..	..	..	..	3	60	10	7	3	5	..	1	..	7	10	35
36	Washington University School of Medicine	16	..	4	20	5	..	..	2	..	1	6	33	3	4	15	9	..	..	1	3	4	36
37	Creighton University School of Medicine	..	1	..	62	..	1	..	1	..	..	1	4	1	23	9	..	..	..	..	..	2	37
38	University of Nebraska College of Medicine	..	..	1	2	2	..	..	1	..	1	6	3	15	5	..	..	1	..	2	1	38
39	Dartmouth Medical School	..	..	..	..	..	5	1	1	..	..	2	..	..	1	..	..	1	1	6	2	39
40	Albany Medical College	..	..	..	..	..	4	1	..	..	..	..	..	..	1	..	..	..	..	11	..	40
41	Long Island College of Medicine	1	..	..	2	..	13	..	..	1	..	..	..	..	..	..	..	..	1	..	4	..	41
42	University of Buffalo School of Medicine	..	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	2	1	4	1	42
43	Columbia Univ. College of Physicians & Surgeons	4	1	2	5	3	17	1	4	1	4	1	11	4	1	1	..	1	2	3	28	2	43
44	Cornell University Medical College	1	2	..	7	..	11	..	1	5	4	1	..	1	1	1	1	1	2	..	14	..	44
45	New York Medical College	..	..	..	3	..	12	..	..	..	..	..	..	..	..	..	..	..	1	4	..	..	45
46	New York University College of Medicine	3	..	..	2	..	10	..	1	..	1	..	2	1	1	1	1	..	2	17	..	..	46
47	Univ. of Rochester Sch. of Med. and Dentistry	..	..	..	11	..	5	..	..	1	1	3	..	..	1	3	..	..	1	11	3	47
48	Syracuse University College of Medicine	..	..	..	..	..	2	..	..	..	1	1	..	2	1	..	..	1	..	3	..	48
49	University of North Carolina School of Medicine	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	49
50	Duke University School of Medicine	6	1	1	6	1	4	3	5	7	11	..	8	..	2	..	3	1	1	6	5	..	50
51	Wake Forest College School of Medical Sciences	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	51
52	University of North Dakota School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	52
53	University of Cincinnati College of Medicine	3	..	..	5	3	1	..	1	..	..	1	5	13	1	..	27	..	1	1	1	3	53
54	Western Reserve University School of Medicine	..	..	..	6	..	2	..	1	1	..	2	5	2	4	1	1	..	..	3	6	54
55	Ohio State University College of Medicine	..	..	..	..	2	2	..	1	..	1	..	2	3	1	1	3	1	..	2	2	1	55
56	University of Oklahoma School of Medicine	4	1	4	2	3	..	..	..	..	..	..	5	2	5	13	..	..	..	..	1	..	56
57	University of Oregon Medical School	..	1	..	4	2	2	..	1	..	..	14	4	3	4	3	1	..	..	..	2	..	57
58	Hahnemann Medical College	..	1	1	2	..	9	6	1	1	1	..	9	2	2	..	..	..	1	2	21	3	58
59	Jefferson Medical College of Philadelphia	3	1	..	3	..	4	9	..	1	1	1	2	5	1	1	1	..	4	5	10	1	59
60	Temple University School of Medicine	1	2	..	5	..	6	3	..	7	2	2	2	2	1	1	1	..	..	5	5	5	60
61	University of Pennsylvania School of Medicine	9	..	..	2	..	2	2	1	2	3	1	5	3	4	2	3	..	7	1	8	..	61
62	Woman's Medical College of Pennsylvania	1	1	..	3	1	3	1	1	..	..	1	6	..	..	..	..	..	..	1	3	1	62
63	University of Pittsburgh School of Medicine	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	2	..	..	63
64	Medical College of the State of South Carolina	3	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	64
65	Univ. of South Dakota School of Medical Sciences	..	..	..	..	..	..	..	..	..	..	2	1	4	1	..	..	..	..	1	2	65
66	University of Tennessee College of Medicine	17	..	12	4	..	..	..	1	5	7	..	8	..	..	8	23	5	..	1	1	..	66
67	Meharry Medical College	9	..	4	1	..	1	..	7	12	20	..	4	..	..	1	3	8	..	1	1	..	67
68	Vanderbilt University School of Medicine	15	..	4	2	..	..	..	1	6	4	..	3	..	1	2	22	1	..	..	..	..	68
69	Baylor University College of Medicine	3	2	8	2	..	..	..	1	1	3	..	2	..	..	4	3	5	..	..	1	..	69
70	University of Texas Faculty of Medicine	1	..	3	..	2	1	..	..	..	3	..	1	..	2	4	..	5	..	..	..	..	70
71	University of Utah School of Medicine	..	1	..	..	1	..	..	..	..	6	1	..	..	..	..	..	..	..	..	..	..	71
72	University of Vermont College of Medicine	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	4	..	10	..	72
73	University of Virginia Department of Medicine	7	..	..	..	..	3	2	3	2	4	..	..	..	..	..	1	..	..	6	3	..	73
74	Medical College of Virginia	1	..	1	5	1	2	2	3	2	4	..	1	1	2	..	2	..	..	1	1	..	74
75	West Virginia University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75
76	University of Wisconsin Medical School	..	1	..	1	1	1	..	..	1	3	15	2	4	2	2	..	..	..	2	6	76	
77	Marquette University School of Medicine	..	..	1	13	..	..	..	2	..	2	9	3	5	1	..	1	1	..	2	18	77	
78	University of Alberta Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	78
79	University of Manitoba Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79
80	Dalhousie University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	5	..	80
81	Queen's University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	81	
82	University of Western Ontario Medical School	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	82
83	University of Toronto Faculty of Medicine	..	..	..	1	..	2	..	1	..	..	1	1	1	..	..	..	..	..	1	1	1	83
84	McGill University Faculty of Medicine	..	1	..	20	1	3	..	1	..	1	2	..	1	1	..	..	..	3	..	23	1	84
85	University of Montreal Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	1	..	85
86	Laval University Faculty of Medicine	..	..	..	..	..	3	..	..	..	..	1	..	..	..	..	..	..	1	..	5	..	86
87	Univ. of Saskatchewan School of Medical Sciences	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	87
	Totals	295	53	251	718	204	284	36	157	180	419	102	1356	647	434	346	319	349	113	296	853	596	

of Students

Marginal Number	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Territories and Possessions	Canada	Foreign	Totals	Marginal Number
1	..	..	3	..	1	..	2	..	..	..	..	..	1	..	..	3	..	..	..	3	..	..	..	1	1	..	1	1	103	1
2	2	2	4	..	..	..	..	5	2	23	..	..	1	7	..	1	..	1	..	7	7	1	..	1	..	1	6	..	..	1	3	278	2
3	6	..	8	2	6	1	..	3	..	19	..	..	5	2	5	3	..	..	..	1	3	..	1	5	..	..	..	..	4	10	241	3
4	12	1	3	2	7	..	1	2	3	11	2	6	6	7	8	12	..	1	6	4	4	1	..	2	13	1	9	..	9	14	32	316	4
5	6	1	6	7	5	1	..	2	1	7	..	3	6	1	4	6	..	..	5	..	4	3	..	..	5	..	4	1	1	2	9	392	5
6	4	..	2	1	..	4	1	..	2	9	..	2	2	4	4	3	..	..	1	..	2	10	..	..	13	1	1	1	3	3	10	240	6
7	4	..	5	4	8	1	..	2	2	4	..	..	4	1	2	3	..	1	9	..	4	2	..	..	..	..	2	3	2	..	2	204	7
8	..	..	..	2	..	..	1	15	1	30	1	..	6	..	..	17	9	..	1	..	2	..	..	1	5	3	1	..	1	1	11	208	8
9	..	..	1	1	..	..	8	44	..	101	4	..	5	..	1	41	13	1	..	..	..	..	1	1	2	2	2	1	..	6	..	7	326	9
10	3	..	4	1	1	..	1	14	..	23	1	..	6	..	3	19	..	..	1	2	1	9	1	10	4	6	4	..	5	..	10	248	10
11	..	2	3	..	..	..	..	6	..	14	6	..	2	1	..	7	..	1	..	1	2	..	..	7	1	4	..	..	1	..	12	119	11
12	..	4	..	..	..	..	..	..	..	1	9	..	1	..	..	..	..	12	..	..	..	..	..	1	..	..	..	..	..	1	..	219	12
13	..	..	..	..	..	..	..	1	..	..	..	..	1	1	..	1	..	6	..	2	2	..	..	..	1	..	..	..	..	..	1	166	13
14	3	1	2	2	1	..	..	10	..	19	..	..	25	..	..	15	..	1	2	..	1	..	..	..	2	1	2	..	3	3	14	302	14
15	11	1	19	17	12	3	..	6	4	4	1	11	23	5	1	12	..	1	13	..	2	17	..	..	36	5	24	4	3	5	12	556	15
16	5	..	9	..	4	..	4	2	1	8	4	13	4	2	..	5	1	..	10	1	..	19	..	..	8	7	16	..	5	..	11	212	16
17	3	4	2	6	5	..	..	4	2	10	2	2	6	4	2	5	1	..	6	..	1	3	..	1	11	1	9	3	2	..	2	273	17
18	4	1	8	..	2	..	..	3	2	19	1	1	4	1	1	6	1	..	1	1	..	..	..	..	..	..	5	1	..	4	32	636	18
19	..	..	..	..	..	..	..	2	..	5	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	469	19
20	6	..	2	..	5	..	..	..	..	2	..	1	2	..	1	2	..	..	6	1	3	..	..	..	1	1	1	3	..	2	8	293	20
21	2	..	50	..	4	..	..	..	..	3	..	..	4	10	..	..	..	..	2	..	2	..	..	..	1	1	3	..	1	2	3	294	21
22	1	4	10	..	..	..	..	5	2	22	2	1	27	3	3	7	1	3	1	2	2	9	..	..	3	7	7	1	3	3	5	341	22
23	3	14	4	1	1	..	..	1	1	36	..	1	1	2	..	3	1	5	..	11	17	6	..	..	1	..	..	..	3	1	9	351	23
24	..	77	5	..	..	..	..	4	4	17	8	..	1	12	..	2	..	11	..	2	50	..	3	1	2	1	..	6	..	11	473	24
25	4	4	2	2	..	..	1	14	..	35	9	2	6	..	1	18	1	4	1	3	5	3	..	3	1	4	4	..	1	4	14	279	25
26	1	1	..	1	..	..	1	17	..	35	17	..	8	..	1	35	2	3	1	2	..	3	..	3	..	28	..	..	20	..	3	370	26
27	..	..	..	..	..	..	4	3	..	23	..	..	1	..	1	..	1	..	7	..	..	..	..	..	..	..	1	..	1	2	4	205	27
28	11	2	19	4	4	1	2	10	..	65	16	1	26	..	4	23	15	1	1	4	7	5	2	4	9	5	6	..	6	3	24	522	28
29	..	..	..	..	..	..	14	7	..	12	..	1	1	..	1	19	..	..	..	..	..	..	5	2	2	..	..	..	..	..	12	386	29
30	5	1	..	7	2	..	..	13	..	22	..	2	28	2	1	13	1	1	2	1	4	1	1	2	10	3	5	..	8	3	9	466	30
31	4	..	3	..	..	..	1	2	..	12	..	..	11	..	..	11	..	..	..	2	..	3	..	..	..	..	2	..	..	13	5	245	31
32	326	..	2	11	5	..	..	1	1	7	..	10	..	2	..	..	..	..	12	..	1	1	..	..	11	..	16	..	1	7	5	454	32
33	..	36	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	44	33
34	..	..	60	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	75	34
35	6	2	59	13	2	1	..	12	2	49	..	..	50	4	3	22	6	1	1	..	5	6	..	..	10	3	6	1	10	4	4	418	35
36	6	1	112	2	1	2	..	3	1	18	4	2	5	3	3	2	..	..	3	2	3	9	..	1	13	1	6	1	4	9	345	36
37	7	..	3	5	36	..	..	7	..	19	..	2	9	1	5	1	..	..	12	..	2	..	..	..	9	..	3	3	2	..	..	231	37
38	4	..	5	2	241	1	..	..	..	2	..	1	2	2	..	1	..	..	8	..	2	1	..	..	1	..	3	..	..	4	320	38
39	1	..	..	2	1	..	6	..	..	7	..	..	..	1	..	2	..	..	..	..	..	1	..	..	..	..	..	..	..	1	42	39
40	..	1	..	..	..	5	7	..	91	..	..	..	2	..	..	1	1	..	1	..	..	..	2	..	..	..	..	..	..	..	128	40
41	..	..	..	..	..	..	37	..	280	..	..	..	3	..	..	6	..	..	..	..	1	..	1	1	..	..	..	..	..	3	354	41
42	..	..	1	..	..	..	2	..	205	..	..	1	14	..	..	16	1	..	..	..	..	..	..	..	..	..	..	..	..	3	259	42
43	4	..	3	..	..	1	3	40	..	190	3	1	8	..	1	16	5	..	..	3	3	2	2	5	4	1	3	..	4	1	9	413	43
44	..	..	1	1	..	1	..	48	..	157	4	..	6	..	1	12	2	..	2	..	2	..	1	..	..	..	1	..	..	..	..	292	44
45	..	..	..	..	1	..	..	55	..	188	..	1	4	..	..	4	..	..	..	..	1	..	..	..	..	..	1	..	2	..	..	278	45
46	1	..	4	..	..	..	1	52	..	334	1	..	6	..	..	19	..	..	..	..	1	1	1	1	..	..	..	2	3	25	..	495	46
47	1	..	2	..	1	..	1	9	..	98	3	1	16	1	..	2	..	..	1	..	1	..	1	2	1	..	..	1	..	4	4	200	47
48	1	..	..	1	..	..	1	5	1	134	..	..	..	..	..	10	..	..	..	..	..	..	1	1	..	..	..	..	1	2	..	170	48
49	..	..	..	..	..	..	..	3	..	2	65	..	..	..	..	..	..	..	1	..	1	..	..	..	3	..	..	..	..	..	..	79	49
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51	..	..	..	..	..	..	..	..	..	1	53	..	..	..	..	1	..	2	..	..	..	..	..	..	1	..	..	..	..	..	..	60	51
52	5	..	1	3	..	..	..	..	..	..	..	34	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	49	52
53	..	..	3	..	..	..	..	7	1	14	..	..	100	..	..	9	..	2	..	..	..	..	..	..	1	5	2	..	1	2	393	53
54	1	..	..	..	..	..	1	3	..	9	..	..	109	..	2	20	1	1	..	1	..	..	..	1	11	1	..	1	1	9	365	54
55	2	..	1	..	1	..	..	1	..	5	..	..	231	2	..	14	..	..	..	..	1	..	..	1	..	..	12	..	..	1	13	355	55
56	1	3	7	..	4	..	..	..	1	5	..	..	..	142	..	4	..	..	..	3	15	..	..	..	1	1	..	1	..	1	231	56
57	6	..	2	11	2	..	..	..	1	1	..	3	2	..	89	1	..	..	2	..	2	3	..	..	59	1	1	..	1	9	3	240	57
58	1	4	2	..	..	1	4	66	..	62	3	..	18	..	..	264	4	..	..	1	3	1	1	1	5	2	..	21	1	16	543	58
59	..	2	4	1	..	..	1	43	1	13	19	..	18	..	..	197	9	4	..	1	1	1	1	3	1	2	..	..	8	2	13	497	59
60	..	..	5	..	1	..	2	35	..	22	13	10	11	..	..	250	..	1	1	3	5	..	2	4	4	6	..	7	2	11	446	60
61	1	..	9	1	3	1	..	38	..	18	14	3	12	..	2	271	2	1	..	5	6	6	..	2	4	12	5	1	2	14	491	61
62	1	..	2	..	..	1	..	4	..	22	1	2	3	1	..	29	..	..	..	..	1	..	..	2	..	..	..	3	1	7	193	62
63	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	238	..	..	..	..	1	..	..	2	3	..	..	..	1	2	257	63
64	..	..	..	..	..	..	..	1	..	2	4	..	..	..	..	1	..	153	..	..	..	..	..	..	2	..	..	..	..	2	171	64
65	1	..	..	2	1	..	..	1	..	..	..	3	1	..	..	..	..	..	24	..	..	..	..	1	..	..	..	2	..	2	50	65
66	..	63	10	..	..	..	..	..	1	6	7	1	..	13	4	3	..	1	..	191	17	4	..	3	5	1	2	2	1	1	2	254	66
67	..	11	1	..	..	..	..	4	1	5	15	..	4	..	..	8	..	11	..	11	19	..	..	19	..	2	..	..	..	..	2	439	67
68	1	10	10	1	..	..	..	3	..	3	2	1	2	3	..	1	2	9	1	71	6	..	..	4	1	2	1	1	..	3	2	196	68
69	..	7	6	..	1	1	..	4	2	..	..	..	3	11	..	5	..	1	..	2	217	..	..	..	1	1	1	..	1	6	3	305	69
70	..	..	4	..	1	..	..	..	1	2	1	..	2	4	..	3	1	1	..	3	324	..	..	1	..	..	..	1	..	3	374	70
71	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	49	..	..	..	1	..	..	..	1	56	71
72	..	..	..	..	1	..	4	5	..	9	..	..	4	..	..	2	..	1	..	..	1	..	81	1	..	..	..	..	1	2	191	72
73	..	..	8	..	..	..	..	8	..	7	7	..	2	..	..	..	..	3	..	3	1	..	155	1	12	..	..	3	..	..	254	73
74	2	..	3	1	1	..	..	6	1	22	38	..	5	1	..	6	..	1	..	4	1	..	110	..	45	1	..	12	1	5	295	74
75	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	..	1	..	..	..	..	2	..	39	..	..	..	..	..	45	75
76	6	..	..	1	..	..	..	..	..	5	1	1	3	..	1	4	..	..	..	1	1	1	..	..	2	1	182	1	..	3	7	262	76
77	16	..	1	2	1	1	..	3	..	41	..	3	11	..	1	10	..	..	..	..	..	1	..	2	10	..	129	..	12	2	9	313	77
78	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	217	10	233	78
79	..	..	..	1	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	1	211	2	218	79
80	..	..	..	..	..	..	..	1	..	22	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	129	30	183	80
81	1	..	..	1	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	245	18	278	81
82	..	..	..	..	..	..	..	1	..	14	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	194	8	223	82
83	1	..	2	1	..	..	1	..	1	7	..	..	3	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	602	58	777	83
84	1	..	2	..	3	1	18	12	..	35	4	..	7	1	1	4	2	..	..	..	2	..	3	1	3	..	1	..	..	235	30	444	84
85	..	..	..	..	..	..	5	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	193	..	205	85
86	..	..	..	..	..	..	6	4	..	15	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	1	276	1	314	86
87	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	1	48	87
	507	393	511	132	379	24	98	742	43	2766	388	129	1068	262	162	1877	110	269	132	357	765	191	107	392	292	206	489	33	196	2577	669	24194	

(Continued from page 689)

respect to ninety-six items, served as the basis of these charts. For the schools offering instruction only in the basic sciences and for the medical schools of Canada, similar graphs were prepared, each school being placed in the same decile rank as other schools with approximately the same evaluation.

A committee of the Council consisting of Dr. Weiskotten, Alphonse M. Schwitalla, S.J., Ph.D., Dean, St. Louis University School of Medicine, William D. Cutter, M.D., Secretary, and Hamilton H. Anderson, M.D., a member of the staff, Council on Medical Education and Hospitals, prepared a final report which was released in January 1940. This publication is entitled "Medical Education in the United States, 1934-1939," [1] Without naming individual schools, the report describes in general terms the organization and administration, the faculty and student personnel, and the clinical and financial resources of the medical schools, thus presenting an objective picture of medical education in this country for the years under review. In this way it was believed that faculties and administrative officers may learn what other schools are doing, emulating that which is good and avoiding that which experience has shown to be unprofitable.

DEVELOPMENTS IN MEDICAL EDUCATION

Reports received from a large number of medical schools and follow-up inspections of many indicate that, as a result of the Council's survey, substantial improvements have been and are being made. Where facilities were inadequate the size of classes has been reduced, entrance requirements have been raised, the teacher-student ratio in the basic medical science departments in 1939 was 1:8 as compared to 1:11 in 1934, clinical facilities have been improved, budgets have increased and curriculums have been revised.

In summary the report [1] declares that "Some of the most important changes and significant improvements of recent years do not lend themselves to statistical treatment. Imponderables still count heavily. In some institutions administrative reorganizations have greatly strengthened personnel and educational programs. In such efforts the Council has cooperated and in some instances has aided substantially in securing for the schools from trustees or legislative bodies greater financial and administrative support. The procedure of the Council has been different from what it was in 1905-1910 for the reason that the whole picture of medical education is radically different from what it was thirty years ago. Even the weakest of the medical schools at the time of this survey was a stable institution as compared with the numerous proprietary schools and diploma mills in existence at the time that the Council was created. Rather than to publicly proclaim their deficiencies, therefore, it seemed wiser to give aid and encouragement to those schools which needed help, in the hope that within a reasonable period they would be able to conform to the current standards of medical education. This expectation has been justified by the achievements of the past three or four years during which the Council has been able to stimulate greater interest in medical schools on the part of their universities; to assist administrative officers in the solution of their problems of organization and personnel; to assist in securing satisfactory hospital relationships; to foster the development of more modern educational programs and stimulate curricular studies by faculty groups, and to secure greater financial and public support. In all of these ways and many others the cause of medical education has been promoted, its standards advanced and its purposes more nearly achieved."

Since the Council's first classification of medical schools and the publication of the Carnegie report,[2] there has been probably no five year period which has witnessed such activity and progress in the field of medical education.

CURRICULUM

The standard curriculum recognized by the Council on Medical Education and Hospitals and contained in its Essentials of an Acceptable Medical School consists of from 3,600 to 4,400 distributed as from 900 to 1,000 hours a year and grouped under nine headings: anatomy, including histology and embryology; physiology; biochemistry; pathology, bacteriology and immunology; pharmacology; hygiene and sanitation; general medicine; general surgery, and obstetrics and gynecology. A certain percentage of hours of the whole number of hours in the courses is required in each of these groups.

APPROVAL OF SCHOOLS IN CANADA

On June 24, 1937, at a meeting in Ottawa, Ont., Canada, at which representatives of the medical schools in Canada and the assistant secretary of the Canadian Medical Association were present, the secretary speaking for the Council on Medical Education and Hospitals discussed the survey of Canadian medical schools made during 1934-1936 and inquired as to the policy to be adopted in the future—that is, whether the American Medical Association should continue the grading of medical schools in Canada or whether they would prefer that the medical schools themselves or some other body take over this task. The problem was referred to the Canadian Medical Association.

At its sixty-ninth annual meeting in June 1938 the Committee on Medical Education of the Canadian Medical Association brought in a report which was accepted by the members of the General Council of the Canadian Medical Association and reads, in part, as follows:

"In the event of the Council on Medical Education of the American Medical Association publishing a list of approved schools, those Canadian schools wishing their inspection and approval could request this inspection. This would leave each school free to deal directly with the Council on Medical Education of the American Medical Association and thus obviate misunderstandings.

"There seems to be a fairly uniform opinion expressed by the various medical schools in Canada that the Canadian Medical Association should share some responsibility in this country so far as medical education is concerned. The majority of the schools, however, feel that the aims and purposes of the Canadian Medical Association are not primarily those of undergraduate medical education, which is largely a problem of the schools themselves. However, it was recommended that, if the Council on Medical Education and Hospitals of the American Medical Association in the future conduct similar surveys at five or ten year intervals, such as the recent survey, the Canadian schools take advantage of and be included in this survey. Those schools which are members of the Association of American Medical Colleges could have a representative from

1. Weiskotten, H. G.; Schwitalla, A. M.; Cutter, W. D., and Anderson, H. H.: Medical Education in the United States, Chicago, American Medical Association, 1940.

2. Medical Education in the United States and Canada, Carnegie Foundation for the Advancement of Teaching, 1910.

this association included in the personnel of the inspection. The remaining schools which are not members of the Association of American Medical Colleges could ask to have a member of the Association of American Medical Colleges included in the inspecting personnel, or some representative from the Committee on Medical Education of the Canadian Medical Association."

It would appear from the foregoing that the approval of Canadian medical schools by the Council on Medical Education and Hospitals of the American Medical Association rests with the schools themselves.

The Council on Medical Education and Hospitals at a meeting in St. Louis on May 13, 1939, voted that after Jan. 1, 1945, the Canadian medical schools will be included in the Council's classification only at their own request.

STATISTICS OF MEDICAL SCHOOLS AND SCHOOLS OF THE BASIC MEDICAL SCIENCES

Medical schools and schools of the basic medical sciences approved by the Council on Medical Education and Hospitals during 1939-1940 are listed in tables 2 and 3, pages 686 and 688. Recorded therein is the preliminary requirement for the session 1940-1941 by years, the length of the medical course by years, enrolment by classes for the session 1939-1940, including fifth year students interning or engaged in research, total attendance, the number of graduates since July 1, 1939, the dates of the beginning and ending of the forthcoming session, the month until which applications for admission to the freshman class are received and the name of the dean or executive officer. Three schools on probation are indicated by an asterisk preceding the name. There have been no changes in the classification of any medical school since the publication of the educational statistics in 1939. Also contained in the footnotes are references to the fifth and sixth year enrolments and names of the schools which admit students at varying times during the year. The fifth year (internship) enrolment is not included in the column giving the total number of students by classes. At Louisiana State University Medical Center the fifth or intern year was discontinued beginning with the class of 1940 but there were sixty-four students who completed the four year course in 1939 and were awarded degrees in 1940 on completion of the internship, but seventy-two students who completed four years in 1940 were awarded degrees without serving an internship. Duke University School of Medicine requires a two year internship after graduation. The number in hospitals during this period are also included in a footnote. The two medical schools of the University of Chicago do not report their students by classes, and in this tabulation therefore only the total enrolment is given. The fifth, or intern, year was also discontinued by McGill University Faculty of Medicine with the class of 1940, but the school will maintain a record of those who intern, since it is a requirement for medical licensure.

Similar data pertaining to the schools of the basic medical sciences are given in table 3. The data presented in tables 2 and 3 constitute the basis also for several of the subsequent tabulations, and beginning on page 701 are given historical information and essential facts concerning the schools arranged by states.

Sixty-seven medical schools in the United States and nine faculties of medicine of Canada are listed; also ten schools of the basic medical sciences in the United States and one in Canada. All but three of these schools at the present time enjoy the approval of the Council, the three being on probation. In eighty-five schools 6,445 freshmen students were enrolled, 5,735 sophomores, 5,447 juniors, 5,439 seniors, 388 fifth year and 255 sixth year students during the session just ended. In the two medical schools of the University of Chicago 485 students were enrolled, making a total of 24,194 in the eighty-seven schools listed. In the United States there were 5,794 freshmen, 5,177 sophomores, 4,921 juniors, 4,894 seniors and the 485 students of the University of Chicago, a total of 21,271. The total number of students in the United States registered by classes, including fifth or intern year students, was 22,423. The enrolment in the schools of the basic medical sciences in the United States numbered 603, of which 318 were freshmen and 285 sophomores. The enrolment in the ten Canadian schools was first year 651, second year 558, third years 526, fourth year 545, fifth year 388 and sixth year 255, a total of 2,923. In the one school of the basic medical sciences in Canada there were forty-eight students: twenty-four freshmen and twenty-four sophomores.

Medical students enrolled in institutions in the United States and Canada numbered 24,194, exclusive of 1,152 fifth year students in the United States interning or engaged in research and 132 in Canada interning as a requirement for the degree of Doctor of Medicine or in order to be eligible for licensure.

Since July 1, 1939, 5,703 received the degree of Doctor of Medicine, 5,097 from schools in the United States and 606 from Canadian institutions.

There were also 108 part time, 228 special and 606 physicians or graduate students studying in medical schools.

With one exception the schools of the basic medical sciences had an enrolment of considerably less than 100. The lowest enrolment among the regular medical schools was 103 students at the Woman's Medical College of Pennsylvania and the highest 777 at the University of Toronto Faculty of Medicine. The correspondingly high figure among schools in the United States was 636 enrolled at the University of Illinois College of Medicine.

Eleven schools, exclusive of those of the basic medical sciences, matriculated 200 or less, thirty-two between 201 and 300, sixteen from 301 to 400, twelve from 401 to 500, and three from 501 to 600. Two schools matriculated more than 600. The smallest enrolment (forty-two) was at Dartmouth Medical School, where twenty freshmen and twenty-two sophomores were enrolled. This school does not offer the complete medical course.

The Woman's Medical College likewise graduated the lowest number, eighteen. The school granting degrees to the greatest number was the University of Illinois College of Medicine, which awarded 162 diplomas. Twenty-three schools granted degrees to classes of fewer than fifty students, thirty-three schools graduated between fifty-one and 100 each, seventeen from 101 to 150 and three less than 200 but more than 150.

The majority of schools will begin the session 1940-1941 about the middle of September and complete the year's work early in June.

Seventy schools replied to the inquiry regarding the month until which applications for admission to the first year class will be received. Seventeen replied March, sixteen September, seven each June and August, six each April and May, five February and three each January and July.

In reply to the question "Is a deposit required with application?" fifty-eight schools reported "no" while twenty-seven gave an affirmative answer. Of the latter, eight indicated the fee was returnable and nineteen that it was not. Fifteen required with the application a deposit of $5 or less and twelve reported from $10 to $100, i. e. one reports $10, two $20, four $25, four $50 and one $85, while three of these schools had a nonresident fee of $25, $50 and $100 respectively. Of those requiring a deposit of $20 or more, four indicated that the fee was not returnable and made no comment, one stated that it was not returnable if the student accepts an appointment in another medical school, and another stated it was returnable if notice of withdrawal is given in time to permit the vacancy to be filled. Four schools stated that an acceptance fee of $50 was required.

TABLE 7.—*Students Classified by Birth Place*

	Schools	Attending School in State of Birth	Birth Place Elsewhere
Alabama	1	71	32
Arkansas	1	167	111
California	4	380	619
Colorado	1	111	93
Connecticut	1	42	166
District of Columbia	3	86	607
Georgia	2	278	107
Illinois	5	953	1,026
Indiana	1	447	13
Iowa	1	225	68
Kansas	1	184	110
Kentucky	1	146	195
Louisiana	2	260	523
Maryland	2	200	449
Massachusetts	3	491	622
Michigan	2	392	319
Minnesota	1	326	128
Mississippi	1	36	8
Missouri	3	231	697
Nebraska	2	277	274
New Hampshire	1	6	36
New York	9	1,677	912
North Carolina	3	158	240
North Dakota	1	34	15
Ohio	3	500	285
Oklahoma	1	142	89
Oregon	1	89	151
Pennsylvania	6	1,949	988
South Carolina	1	153	18
South Dakota	1	24	26
Tennessee	3	273	562
Texas	2	541	138
Utah	1	42	14
Vermont	1	81	50
Virginia	2	285	264
West Virginia	1	39	6
Wisconsin	2	311	264
Canada	10	2,449	474
Totals	87	13,585	10,609

BIRTH PLACE OF STUDENTS

The birth state of students in attendance in medical schools during 1939-1940 is shown in table 6, pages 690 to 691. The greatest number of students registered, 2,766, according to state of birth, was from New York, followed by Pennsylvania with 1,867, Illinois with 1,356 and Ohio with 1,068. From each of four states there was a student enrolment of between 701 and 1,000 and between 501 and 700, from three states 401 to 500, from seven states between 301 and 400, from ten states 201 to 300, from eleven states, 101 to 200, and from six states less than 100.

There were 196 born in the United States territories and possessions studying in forty-six schools in the United States and three in Canada. In addition, 2,577 students of Canadian birth were also studying medicine, 128 of whom were matriculated in forty-four schools in the United States and 2,449 in the ten Canadian medical schools. Fourteen students of Canadian birth were registered at the College of Medical Evangelists, thirteen at Wayne University College of Medicine and nine at the University of Oregon Medical School. Other schools registered less than seven. Students born in New York were enrolled in all but four states, namely North Dakota, South Dakota, Utah and West Virginia. Students from New York were registered in four of the six provinces of Canada having medical schools. None were studying in Alberta or Saskatchewan. Pennsylvania was represented in all but six states and three provinces.

There were 742 students from New Jersey, which has no medical school, admitted to sixty-two schools, while 292 from the state of Washington were enrolled in fifty-one schools.

Foreign born students were matriculated in sixty-eight of the seventy-seven medical schools in the United States. There were 511 so enrolled, of whom thirty-two each were studying at the College of Medical Evangelists and the University of Illinois College of Medicine, twenty-five at New York University College of Medicine and twenty-four at Harvard Medical School. Other schools registered fewer than sixteen. It may be presumed that many of these are now citizens of the United States.

From the twelve states in which no medical schools are located there were 1,860 students in at least sixty-two schools as follows:

	Enrolled	No. of Schools
Arizona	53	32
Delaware	36	16
Florida	180	39
Idaho	102	32
Maine	113	31
Montana	132	39
Nevada	24	17
New Jersey	742	62
New Mexico	43	27
Rhode Island	110	25
Washington	292	51
Wyoming	33	19
	1,860	

The classification of students by birthplace is extended further in table 7 for the medical schools of the United States and Canada. This compilation reveals that 13,585 students are studying in the state of their birth and 10,609 elsewhere. In the schools of Illinois 953 were born in the state and 1,026 elsewhere. More than 900 born outside the state were enrolled in institutions in New York and Pennsylvania but the number of those born within and studying in these states was greater. Schools located in California, Connecticut, the District of Columbia, Kentucky, Louisiana, Maryland, Massachusetts, Missouri and Tennessee enrolled more students born outside the state than from within.

In the United States 11,136 students were attending school in the state of their birth and 10,135, or 44 per cent, elsewhere. Eliminating the 1,860 from states which have no medical school, there are still 8,749 of the total number of students, 24,194, studying outside their birth state. Similar figures for Canada are, respectively, 2,449 and 474.

RESIDENT AND NONRESIDENT STUDENTS

Data regarding students classified as residents or nonresidents are enumerated in table 8. Among state universities, as well as other schools, there is a wide variation in the definition of the term "resident." In some universities this is determined by the legal or permanent residence of the student, parents or guardian

only, while in some schools continuous residence for from six months to one, two or three years just prior to the student's application for enrolment is also required. Others require the student to be a voter; that the parents' home in the state be established prior to the beginning of premedical work; the student to be a taxpayer or a dependent of a taxpayer, regardless of whether he resides in the state, or require the student to be self supporting. In some schools each case is determined by an attorney after consideration of birth, citizenship, residence of parents, and so on. The most common method is the determination of residence by ascertaining whether the student, parents or guardian has been a bona fide resident for a period of not less than six months. In some schools also a student coming into the state for educational purposes only would not be considered a resident. Among medical schools not a part of a state university the term "resident" is defined mostly by the home address of the student or the legal residence of the parents or guardian. In one school a student is considered a resident if he lives in the state.

TABLE 8.—*Resident and Nonresident Students*

	Resident Students	Nonresident Students	Totals
University of Alabama	81	22	103
University of Arkansas	219	59	278
University of California	238	3	241
College of Medical Evangelists	91	225	316
University of Southern California	191	11	202
Stanford University	205	35	240
University of Colorado	182	22	204
Yale University	51	157	208
Georgetown University	23	303	326
George Washington University	53	195	248
Howard University	10	109	119
Emory University	137	82	219
University of Georgia	166	..	166
Loyola University	144	158	302
Northwestern University	202	354	556
Rush Medical College	44	168	212
University of Chicago School of Medicine	109	164	273
University of Illinois	635	1	636
Indiana University	447	13	460
State University of Iowa	287	6	293
University of Kansas	275	19	294
University of Louisville	165	176	341
Louisiana State University	243	108	351
Tulane University of Louisiana	113	358	471
Johns Hopkins University	64	215	279
University of Maryland	182	188	370
Boston University	133	72	205
Harvard Medical School	119	403	522
Tufts College	289	97	386
University of Michigan	351	115	466
Wayne University	242	3	245
University of Minnesota	411	43	454
University of Mississippi	41	3	44
University of Missouri	75	..	75
St. Louis University	64	354	418
Washington University	128	217	345
Creighton University	36	195	231
University of Nebraska	299	21	320
Dartmouth Medical School	7	35	42
Albany Medical College	91	37	128
Long Island College of Medicine	281	73	354
University of Buffalo	205	54	259
Columbia University	198	215	413
Cornell University	137	155	292
New York Medical College	188	90	278
New York University	380	115	495
University of Rochester	109	91	200
Syracuse University	142	28	170
University of North Carolina	65	14	79
Duke University	40	219	259
Wake Forest College	51	9	60
University of North Dakota	47	2	49
University of Cincinnati	224	79	303
Western Reserve University	199	66	265
Ohio State University	307	..	307
University of Oklahoma	224	7	231
University of Oregon	153	87	240
Hahnemann Medical College	282	261	543
Jefferson Medical College	302	195	497
Temple University	268	178	446
University of Pennsylvania	293	198	491
Woman's Medical College	37	66	103
University of Pittsburgh	235	2	237
Medical College of South Carolina	153	18	171
University of South Dakota	36	14	50
University of Tennessee	233	206	439
Meharry Medical College	8	188	196
Vanderbilt University	73	127	200
Baylor University	268	37	305
University of Texas	374	..	374
University of Utah	46	10	56
University of Vermont	104	27	131
University of Virginia	175	79	254
Medical College of Virginia	132	163	295
West Virginia University	45	..	45
University of Wisconsin	247	15	262
Marquette University	148	165	313
Totals	13,292	7,979	21,271

On the basis of these factors, in the sixty-seven approved medical schools and the ten approved schools of the basic medical sciences in the United States there were 13,292 students reported as residents and 7,979 as nonresidents. The state university enrolling the greatest number of nonresidents was the University of Tennessee College of Medicine, which had 233 residents and 206 nonresidents, while at the Universities of Georgia, Missouri, Ohio State, Texas and West Virginia nonresidents were not registered and only one of the 636 students of the University of Illinois College of Medicine was a nonresident.

Among other than state universities, it is of interest to note the resident and nonresident enrolment. Many of the schools select their students from among residents of the state. This is particularly significant at the Universities of Southern California, Stanford, Tufts, Long Island, Buffalo and Syracuse. The enrolment in municipal medical schools consisted largely of resident students.

TABLE 9.—*Resident and Nonresident Students, 1936-1939*

	Resident	Nonresident	Totals
1936-1937	14,026	8,069	22,095
1937-1938	13,518	8,069	21,587
1938-1939	13,418	7,884	21,302
1939-1940	13,292	7,979	21,271

The figures in tables 7 and 8 giving the number of residents and nonresidents and the preceding one classifying students by birthplace show a divergence. More than 2,000 students born outside the state have been classed as residents. Excluding Canadian registration given in table 7 there were 11,136 attending school in the state of their birth and 10,135 elsewhere, as compared with 13,292 whose legal residence is in the state in which they are pursuing their medical courses and 7,979 classified as nonresidents.

The study of resident students has been carried on for four years. For purposes of comparison the figures for the sessions 1936-1939 inclusive are reproduced in table 9. As will be noted, the figures do not vary to any measurable extent.

The ten faculties of medicine of Canada, including one offering courses in the basic medical sciences, reported 2,120 residents of Canada and 803 nonresidents. The definition of a resident by these schools varied from students whose permanent address is within one of the provinces of Canada, or the specific province in which the school is located, to home address on registration and taxpayers. The greatest number of nonresidents in any one school was reported by McGill University Faculty of Medicine, where 277 of the 444 students enrolled were nonresidents. This school obtains a large portion of its student body from the United States. Dalhousie University Faculty of Medicine registered the second greatest number of nonresidents, seventy-eight of an enrolment of 183. All other schools enrolled fewer than sixty-one with one exception—the University of Toronto Faculty of Medicine, where 195 of an enrolment of 777 were nonresidents.

Comparing the figures for Canada in table 7, as in the United States, reveals somewhat similar figures: 2,449 born in Canada and 474 elsewhere, compared with 2,120 residents and 803 nonresidents.

SCHOOLS, STUDENTS AND GRADUATES BY STATES

Medical schools are located in thirty-six states and the District of Columbia. In table 10 are tabulated the

TABLE 10.—*Schools, Students and Graduates by States* *

	Schools	Students	Graduates
Alabama	1	103	...
Arkansas	1	278	63
California	4	999	259
Colorado	1	204	51
Connecticut	1	208	44
District of Columbia	3	693	161
Georgia	2	385	83
Illinois	5	1,979	574
Indiana	1	460	105
Iowa	1	293	71
Kansas	1	294	69
Kentucky	1	341	84
Louisiana	2	882	256
Maryland	2	649	168
Massachusetts	3	1,113	282
Michigan	2	711	185
Minnesota	1	454	104
Mississippi	1	44	...
Missouri	3	858	201
Nebraska	2	551	133
New Hampshire	1	42	...
New York	9	2,589	597
North Carolina	3	398	58
North Dakota	1	49	...
Ohio	3	875	201
Oklahoma	1	231	52
Oregon	1	240	49
Pennsylvania	6	2,337	569
South Carolina	1	171	40
South Dakota	1	50	...
Tennessee	3	835	189
Texas	2	679	165
Utah	1	56	...
Vermont	1	131	36
Virginia	2	549	128
West Virginia	1	45	...
Wisconsin	2	575	129
Totals	77	21,271	5,097

* Excluding fifth or intern year students.

number of schools, students and graduates by states. Nine schools are located in the state of New York and this state naturally had the greatest number of students and graduates, 2,589 and 597 respectively. Pennsylvania with six schools had 2,337 students and 569 graduates; Illinois with five schools 1,979 students and 574 graduates ranks third, while Massachusetts with three schools, 1,113 students and 282 graduates completes the group of states having an enrolment of more than 1,000, although California had 999 students and 259 graduates.

In the seventy-seven schools, including those that offer courses in the basic medical sciences only, there were 21,271 students and 5,097 graduates. Students interning as a requirement for the degree, or fifth year students, are not included in this tabulation. Neither are part-time, special and graduate students. The greatest number of graduates in any one state was 597 who completed their courses in New York schools. There were 574 from Illinois schools and 569 from schools in Pennsylvania. Five other states had more than 200 graduates—California, Louisiana, Massachusetts, Missouri and Ohio. Ten states had more than 100 but less than 200 graduates. Seven states had no graduates, as the medical schools located therein do not offer the complete medical course. All others had less than 100.

The status of two medical schools will change in the future:

Undergraduate courses at Rush Medical College will terminate in June 1942, when the students now enrolled will complete their studies. All undergraduate instruction will thereafter be given on the University of Chicago campus and Rush will become a postgraduate school. The college is now designated The Rush Graduate School of Medicine. Graduate courses are being organized. Wilber E. Post, M.D., has been appointed dean of the graduate school.

On Aug. 4, 1939, the Board of Trustees of Wake Forest College accepted the resources of the Bowman Gray Foundation in Winston-Salem and authorized the medical school to be moved to that city and expanded to offer instruction to include the entire four years leading to the M.D. degree. The physical plant is now under construction. The date of the beginning of the clinical years has not been announced.

REQUIRED INTERNSHIPS

The medical schools and licensing boards requiring a hospital internship for the M.D. degree and state licensure, respectively, are shown in tables 11 and 12. Twelve schools in the United States and three in Canada require an internship for graduation. Several medical schools accept research or other clinical work in lieu of hospital service. The University of Minnesota in 1915 was the first school to adopt this basis for its degree. The two medical schools of the University of Chicago, i. e. Rush Medical College, which had required the internship for the M.D. degree since 1919, and The School of Medicine since 1930, discontinued this formal requirement in 1936. Louisiana State University Medical Center, which since the medical school

TABLE 11.—*Internship Required by Medical Schools*

University of California Medical School
College of Medical Evangelists
University of Southern California School of Medicine
Stanford University School of Medicine
Loyola University School of Medicine
Northwestern University Medical School
University of Illinois College of Medicine
Wayne University College of Medicine
University of Minnesota Medical School
Duke University School of Medicine *
University of Cincinnati College of Medicine
Marquette University School of Medicine
University of Manitoba Faculty of Medicine
Dalhousie University Faculty of Medicine
McGill University Faculty of Medicine †
University of Montreal Faculty of Medicine

* Two year internship required.

† M.D. conferred upon completion of four sessions of thirty-six teaching weeks. Not eligible for licensure until completion of internship.

TABLE 12.—*Internship Required by Medical Licensing Boards of All Candidates*

Alabama	Louisiana	Rhode Island
Alaska	Michigan	South Dakota
Arizona	New Hampshire	Utah
Delaware	New Jersey	Vermont
District of Columbia	North Dakota	Washington
Hawaii	Oklahoma	West Virginia
Idaho	Oregon	Wisconsin
Illinois	Pennsylvania	Wyoming
Iowa	Puerto Rico	

Some states require the internship of graduates of medical faculties abroad and reciprocity or endorsement applicants.

was organized in 1931 has offered a five year course including an internship, discontinued the hospital year beginning with the class of 1940. The fifth year was also discontinued by McGill University Faculty of Medicine as a result of the reorganization of its medical curriculum affecting the freshman class of 1936-1937. The M.D. degree is conferred on completion of four sessions of thirty-six teaching weeks but the holders

of these degrees are not eligible to sit for the licensing examination until the completion of a hospital internship. The M.D. degree is likewise conferred by Duke University School of Medicine after completion of the senior year, but all graduates are required to spend at least two years in a hospital or in laboratory work after graduation.

TABLE 13.—*Distribution by Sex*

	Students		Graduates	
	Men	Women	Men	Women
University of Alabama	102	1	...	..
University of Arkansas	269	9	62	1
University of California	213	28	55	5
College of Medical Evangelists	289	27	95	6
University of Southern California	199	3	43	..
Stanford University	225	15	53	2
University of Colorado	194	10	47	4
Yale University	193	15	41	3
Georgetown University	326	..	80	..
George Washington University	229	19	45	3
Howard University	105	14	31	2
Emory University	219	..	50	..
University of Georgia	158	8	30	3
Loyola University	287	15	112	3
Northwestern University	539	17	151	5
Rush Medical College	300	12	100	6
University of Chicago	255	18	32	3
University of Illinois	588	48	155	7
Indiana University	440	20	104	1
State University of Iowa	277	16	67	4
University of Kansas	282	12	67	2
University of Louisville	351	10	81	3
Louisiana State University	338	13	127	9
Tulane University of Louisiana	454	17	117	3
Johns Hopkins University	253	26	60	8
University of Maryland	351	19	97	3
Boston University	175	30	44	10
Harvard Medical School	522	..	132	..
Tufts College	364	22	91	5
University of Michigan	432	34	115	10
Wayne University	234	11	59	1
University of Minnesota	423	31	101	3
University of Mississippi	42	2	...	..
University of Missouri	74	1	...	..
St. Louis University	418	..	106	..
Washington University	320	25	88	7
Creighton University	217	14	51	6
University of Nebraska	309	11	73	4
Dartmouth Medical School	42	...	...	..
Albany Medical College	123	5	27	2
Long Island College of Medicine	334	20	77	4
University of Buffalo	243	16	56	..
Columbia University	387	36	91	11
Cornell University	267	25	62	8
New York Medical College	259	19	48	2
New York University	457	38	111	13
University of Rochester	189	11	42	3
Syracuse University	156	14	38	2
University of North Carolina	70	9	...	..
Duke University	250	9	57	1
Wake Forest College	57	3	...	..
University of North Dakota	49	..	...	..
University of Cincinnati	285	18	62	4
Western Reserve University	254	11	54	4
Ohio State University	293	14	74	3
University of Oklahoma	219	12	50	2
University of Oregon	229	11	45	4
Hahnemann Medical College	543	..	127	..
Jefferson Medical College	497	..	125	..
Temple University	415	31	114	5
University of Pennsylvania	467	24	129	5
Woman's Medical College	...	103	...	18
University of Pittsburgh	249	8	44	2
Medical College of South Carolina	164	7	36	4
University of South Dakota	49	1	...	..
University of Tennessee	423	16	93	3
Meharry Medical College	190	6	39	..
Vanderbilt University	194	6	52	2
Baylor University	294	11	74	1
University of Texas	347	27	83	7
University of Utah	55	1	...	..
University of Vermont	126	5	34	2
University of Virginia	249	5	62	..
Medical College of Virginia	267	28	58	8
West Virginia University	45	..	...	..
University of Wisconsin	243	19	47	1
Marquette University	300	13	72	..
University of Alberta	216	17	32	3
University of Manitoba	201	17	43	2
Dalhousie University	181	2	35	..
Queen's University	278	..	62	..
University of Western Ontario	208	15	31	..
University of Toronto	724	53	129	9
McGill University	418	26	155	6
University of Montreal	198	7	48	..
Laval University	311	3	51	..
University of Saskatchewan	42	6	...	..
Total	22,903	1,291	5,430	273

The medical licensing boards of twenty-two states, the District of Columbia, Alaska, Hawaii and Puerto Rico require that all candidates for licensure possess a hospital internship. The first state to adopt this requirement was Pennsylvania in 1914. In addition, other states exact the internship of graduates of faculties of medicine abroad and of applicants for reciprocity or endorsement.

Some of the medical schools and licensing boards have their own list of hospitals acceptable for intern training but the Council's approved list is generally in use. A revised edition will be found beginning on page 752.

There were 1,152 students in the United States and 132 in Canada reported as completing the fifth or intern year requirement of the medical schools which exact the fulfilment of the internship as requisite for the M.D. degree. In addition, statistics computed indicate that 98 per cent of the graduates of recent years have obtained or are obtaining this added experience.

DISTRIBUTION BY SEX

Students and graduates in the United States and Canada classified according to sex are shown in table 13. Seventy-six schools had both men and women students, of which fifty-nine had women graduates. Of this total, nine Canadian faculties had students of both sexes and four had women graduates as well as men. Women were enrolled in seven of the ten schools in the United States offering courses of the basic medical sciences and also in the one such school located in Canada. Altogether there were 22,903 men and 1,291 women students and 5,430 men and 273 women graduates. Of these, 20,126 male students and 4,844 graduates were in schools in the United States and 2,777 and 586 respectively in Canada. Likewise there were 1,145 female students and 253 graduates in the United States and 146 students and twenty graduates in Canada. Of the male students and graduates, 2,661 and 892 respectively were enrolled in schools in the United States which are not coeducational and 278 and 227 in Canada.

TABLE 14.—*Distribution by Sex in the United States and Canada, 1936-1939*

	Students		Graduates	
Year	Male	Female	Male	Female
1935-1936	24,219	1,254	5,388	268
1936-1937	23,787	1,244	5,624	261
1937-1938	23,234	1,307	5,439	252
1938-1939	22,919	1,293	5,290	285
1939-1940	22,903	1,291	5,430	273

An average of seventeen women students were enrolled in the sixty-seven coeducational institutions in the United States and three graduates from fifty-five schools.

Figures are given in table 14 showing this distribution for a five year period.

WOMEN IN MEDICINE

Elizabeth Blackwell was graduated in 1849 from the Geneva Medical College of Syracuse, N. Y., now known as Syracuse University College of Medicine, and was the first woman to receive the degree of M.D. in the United States. The first medical school for women was organized in 1850 with a class of seven, the Woman's Medical College of Pennsylvania, and is still

in existence. It is said to be the only medical school for women in the world and to have graduated more than 1,800, including 135 who have become medical missionaries in foreign countries.

During 1939-1940, as shown in table 15, there were 1,145 women studying medicine in the United States,

TABLE 15.—*Women in Medicine in the United States*

Year	Women Students	Percentage of All Students	Women Graduates	Percentage of All Graduates
1905	1,073	4.1	219	4.0
1910	907	4.0	116	2.6
1915	592	4.0	92	2.6
1920	818	5.8	122	4.0
1925	910	5.0	204	5.1
1926	935	5.0	212	5.4
1927	964	4.9	189	4.7
1928	929	4.5	207	4.9
1929	925	4.4	214	4.8
1930	955	4.4	204	4.5
1931	960	4.5	217	4.6
1932	955	4.3	208	4.2
1933	1,056	4.7	214	4.4
1934	1,020	4.5	211	4.2
1935	1,077	4.7	207	4.1
1936	1,133	5.0	246	4.7
1937	1,113	5.1	238	4.4
1938	1,161	5.4	237	4.6
1939	1,144	5.4	260	5.1
1940	1,145	5.4	253	5.0

constituting 5.4 per cent of the student enrolment. There were 253 graduates, seven less than in 1939. Of the women matriculants, 103 were in attendance at the one medical college for women while 1,042 were matriculated in sixty-seven schools admitting women. Eighteen were graduated from the Woman's Medical College of Pennsylvania, while 235 secured their degrees from coeducational schools. In the sixteen years since 1925, 3,521 women have graduated in medicine. The decrease in the number of medical students from 1914 to 1918 affected men and women about equally. From 1920 to 1940 the number of women medical students has remained approximately the same. The Council's list of hospitals approved for internships include many that accept women. Statistics compiled by the American Medical Directory revealed that there were 7,470 women physicians in the United States.

Women are admitted to all medical schools of the United States except:

Georgetown University School of Medicine.
Emory University School of Medicine.
Harvard Medical School.
St. Louis University School of Medicine.
Dartmouth Medical School.
Hahnemann Medical College and Hospital of Philadelphia.
Jefferson Medical College.

In addition, two schools which are not coeducational had no women students enrolled, namely the University of North Dakota School of Medicine and West Virginia University School of Medicine.

PART TIME, SPECIAL AND GRADUATE STUDENTS

In forty-seven medical schools of the United States and six in Canada there were, in addition to the regularly enrolled students, 942 part time, special and graduate students pursuing medical subjects, which are tabulated in table 16. This group composes 108 part time, 228 special and 606 graduate students.

The students studying part time were enrolled in twenty-three schools in the United States and one in Canada. The largest group enrolled in any one school were nineteen studying at the University of Buffalo. Twelve were registered at the University of Kansas and eleven at Wayne University. Less than five were enrolled in fifteen schools.

The 228 special students matriculated in twenty-four schools in the United States and two in Canada. The greatest number (fifty) were at the University of Kansas; at The School of Medicine of the University of Chicago forty-four were in attendance, at the University of North Carolina twenty-three, the University of Tennessee twenty-two, and at Johns Hopkins University seventeen. All other schools registered fewer than eight.

Students registered in the graduate school were pursuing medical subjects in twenty-one medical schools of the United States and four in Canada. There were 606 so registered. At Northwestern University Medical School there were 140 such students. The next highest enrolment was seventy at the University of Toronto Faculty of Medicine, and at Columbia University College of Physicians and Surgeons it was fifty-nine, while other schools had less than fifty.

TABLE 16.—*Part Time, Special and Graduate Students in Medical Schools, 1939-1940*

	Part Time	Special	Graduate
University of Arkansas	2	4	..
University of Southern California	..	7	15
George Washington University	..	..	1
Howard University	5	..	..
Emory University	2	..	..
University of Georgia	2	..	..
Northwestern University	..	..	140
Rush Medical College	..	1	..
University of Chicago, The School of Medicine	..	44	..
Indiana University	..	7	1
State University of Iowa	1	..	11
University of Kansas	12	50	..
University of Louisville	..	..	1
Louisiana State University	2	..	..
Tulane University of Louisiana	5	..	..
Johns Hopkins University	4	17	..
University of Maryland	..	1	..
Boston University	..	2	9
University of Michigan	7	..	3
Wayne University	11	..	47
University of Minnesota	..	3	..
University of Mississippi	6	1	..
St. Louis University	..	..	42
Washington University	2	..	..
Creighton University	..	4	..
University of Nebraska	..	..	6
Albany Medical College	..	2	..
Columbia University	..	..	59
Cornell University	..	8	16
New York Medical College	..	..	13
New York University	5	7	..
University of Buffalo	19	6	..
University of North Carolina	4	23	..
University of North Dakota	2	..	..
University of Cincinnati	..	3	..
University of Oklahoma	1	3	7
University of Oregon	..	5	18
Temple University	..	..	22
University of Pittsburgh	8	..	..
Meharry Medical College	1	1	..
University of Tennessee	..	22	11
Vanderbilt University	2	..	4
University of Texas	..	2	6
University of Utah	2	1	..
Marquette University	2	..	..
University of Wisconsin	..	..	48
McGill University	1	..	6
Queen's University	..	..	2
University of Manitoba	..	1	..
University of Montreal	..	..	48
University of Toronto	..	..	70
University of Western Ontario	..	3	..
Totals	108	228	606

The University of Oklahoma School of Medicine was the only school which matriculated these three types of students.

Among Canadian schools, one part time, four special and 126 graduate students were enrolled.

SCHOOLS, STUDENTS AND GRADATES, 1905-1940

The number of medical schools, students and graduates in the United States for five year intervals from 1905 to 1920 and for each year since is shown in table 17. In 1905 in the 160 schools then existing there were 26,147. For the academic year just ended there were 21,271 students in seventy-seven schools. This tabulation includes data for only those taking medical courses leading to the M.D. degree and does not include part time and special students, though their work may later be accepted for the M.D. degree. Omitted from these figures also are graduate students.

In the ten years 1910 to 1920 there was a decrease in the enrolment of more than 7,000, while from 1921 to 1935 there was a continuous increase and since 1935 there has been a gradual decrease. In 1940 there were thirty-one fewer enrolled than in 1939 and 1,617 than 1935, 1,293 fewer than 1936, 824 in 1937 and 316 in 1938. The number of medical graduates, however, may not be decreased, since more careful selection will doubtless diminish the number of students who fail to complete their course because of poor scholarship.

TABLE 17.—*Schools, Students and Graduates in the United States, 1905-1940*

	Schools	Students *	Graduates
1905	160	26,147	5,606
1910	131	21,526	4,440
1915	96	14,891	3,536
1920	85	13,798	3,047
1921	83	14,466	3,186
1922	81	15,635	2,520
1923	80	16,960	3,120
1924	79	17,728	3,562
1925	80	18,200	3,974
1926	79	18,840	3,962
1927	80	19,602	4,035
1928	80	20,545	4,202
1929	76	20,878	4,446
1930	76	21,597	4,565
1931	76	21,982	4,735
1932	76	22,135	4,936
1933	77	22,466	4,895
1934	77	22,799	5,035
1935	77	22,888	5,101
1936	77	22,564	5,183
1937	77	22,095	5,377
1938	77	21,587	5,194
1939	77	21,302	5,080
1940	77	21,271	5,097

* Includes figures for schools of the basic medical sciences.

The number of graduates in 1940 was 5,097, eight more than in 1939, ninety-seven fewer than 1938, 280 less than in 1937. There were 509 fewer graduates in 1939 from sixty-seven schools granting the M.D. degree than in 1905, when there were 160 schools. With the exception of 1933, 1938 and 1939, there has been an increase in the number of medical graduates each year since 1925.

Not shown in the table this year are figures for the year when the lowest number of M.D. degrees was granted. In that year (1922) there were only 2,520 graduates, because of the small size of the class that entered as freshmen in 1918.

The number of medical schools in 1905 was 160; by 1910 the number had dropped to 131 and since 1915 there have been fewer than 100. Since 1933 there have been sixty-six approved four year schools, one offering only clinical courses and ten schools of the basic medical sciences.

In the seventy-seven medical schools in the United States, including the schools of the basic medical sciences, there were 21,271 students and 5,097 graduates.

GRADUATES WITH BACCALAUREATE DEGREES

From the figures contained in table 18 it can be noted that 3,844 of the 5,703 graduates of medical schools in the United States and Canada since July 1, 1939, also held baccalaureate degrees while only five schools require a degree for admission. All the graduates of eleven schools—Stanford, Chicago, Johns Hopkins, Tufts, Wayne, Cornell, New York University, Western Reserve, Oregon, Jefferson and Woman's—held baccalaureate degrees. Six of these schools either require a degree for admission or will enroll students with three years of college training if the baccalaureate degree is conferred in absentia at the end of the first year in medicine. Four schools in the United States and two in Canada which have a degree requirement accepted altogether twenty-three students with less than the

TABLE 18.—*Graduates with Baccalaureate Degrees*

	Graduates	Degrees
University of Arkansas	63	14
University of California	60	56
College of Medical Evangelists	101	40
University of Southern California	43	27
Stanford University	55	55
University of Colorado	51	41
Yale University	44	43
Georgetown University	80	69
George Washington University	48	31
Howard University	33	28
Emory University	50	32
University of Georgia	33	16
Loyola University	115	37
Northwestern University	156	116
Rush Medical College	106	60
University of Chicago, School of Medicine	35	35
University of Illinois	162	23
Indiana University	105	26
State University of Iowa	71	18
University of Kansas	69	44
University of Louisville	84	53
Louisiana State University	136	71
Tulane University of Louisiana	120	81
Johns Hopkins University	68	68
University of Maryland	100	80
Boston University	54	51
Harvard University	132	126
Tufts College	96	96
University of Michigan	125	100
Wayne University	60	60
University of Minnesota	104	29
St. Louis University	106	69
Washington University	95	79
Creighton University	57	98
University of Nebraska	76	42
Albany Medical College	29	27
Long Island College of Medicine	81	78
University of Buffalo	56	31
Columbia University	102	98
Cornell University	70	70
New York Medical College	50	45
New York University	124	124
University of Rochester	45	43
Syracuse University	40	35
Duke University	58	39
University of Cincinnati	66	45
Western Reserve University	58	58
Ohio State University	77	69
University of Oklahoma	52	17
University of Oregon	49	49
Hahnemann Medical College	127	93
Jefferson Medical College	125	125
Temple University	119	84
University of Pennsylvania	134	126
Woman's Medical College	18	18
University of Pittsburgh	46	44
Medical College of South Carolina	40	23
University of Tennessee	96	54
Meharry Medical College	39	19
Vanderbilt University	54	53
Baylor University	75	23
University of Texas	90	58
University of Vermont	36	32
University of Virginia	62	36
Medical College of Virginia	66	44
University of Wisconsin	48	21
Marquette University	72	31
University of Alberta	35	3
University of Manitoba	45	9
Dalhousie University	35	22
Queen's University	62	2
University of Western Ontario	31	4
University of Toronto	138	33
McGill University	161	122
University of Montreal	48	46
Laval University	51	49
Totals	5,703	3,844

stated college education. Every medical school had graduates with a baccalaureate degree. The school in the United States having the fewest was the University of Arkansas School of Medicine. Of a class of sixty-three, fourteen had degrees. Queen's University Faculty of Medicine had the fewest of any school in Canada. Only two of the sixty-two graduates were in possession of a college degree. A percentage of 67.4 of all graduates held such degrees.

B.S. IN MEDICINE DEGREE

The graduates of thirty schools in the United States and two in Canada received the Bachelor of Science in Medicine degree. There were 688 awarded in the United States and fifty-eight in Canada. The University of Illinois graduates comprising 110 were the largest single group to obtain this degree. Of the two schools in Canada, one issued fifty-one diplomas. Altogether, a total of 746 Bachelor of Science in Medicine degrees were awarded to 5,703 graduates. However, many schools have discontinued this practice while others have never issued any such degrees.

STUDENTS BY CLASSES, 1930-1939

In table 19 is presented the number of students enrolled in preclinical and clinical classes in the medical schools of the United States by years for each session from 1930-1931 to 1939-1940 inclusive. The total

TABLE 19.—*Students in the United States by Years 1930-1940*

	Preclinical		Clinical		Intern Year	Total
1930-1931	6,456	5,538	5,080	4,908	1,025	23,007
1931-1932	6,260	5,462	4,932	4,885	1,067	23,202
1932-1933	6,426	5,479	5,017	4,948	1,106	23,572
1933-1934	6,457	5,571	4,988	4,937	1,183	23,982
1934-1935	6,356	5,624	5,142	4,905	1,233	24,121
1935-1936	6,005	5,458	5,230	5,020	1,213	23,777
1936-1937	5,910	5,269	5,140	5,158	1,255	23,350
1937-1938	5,791	5,225	4,986	5,036	1,132	22,719
1938-1939	5,754	5,160	4,947	4,921	1,152	22,454
1939-1940	5,794*	5,177*	4,921*	4,894*	1,152	22,423

* Excluding enrolment figures for the two medical schools of the University of Chicago, i. e., Rush Medical College 212 and The School of Medicine 273, a total of 485.

attendance for the first preclinical year for the last session was 5,794, forty more than the number enrolled in 1938-1939. Since the year 1933-1934, however, when 6,457 were matriculated, there has been a reduction in this class of 663. In the second preclinical year 5,177 were in attendance in 1939-1940 and, for the two clinical years, 4,921 and 4,894. The two medical schools of the University of Chicago are not operated under the promotion by class system, making it impossible for the schools to report their students in this manner and accordingly they are not included in the figures by classes, but their enrolment is included in the total. Estimates, however, were used in computing totals in 1931, 1934, 1935 and 1938. In 1936, figures for Duke University were also excluded by classes. At Rush Medical College and The School of Medicine of the University of Chicago there were 485 students enrolled during the session just closed, 212 and 273 respectively. By comparison it is noted that the freshman class increased forty, the sophomore enrolment seventeen, the junior and the senior class decreased twenty-six and twenty-seven, respectively, while the number of those interning as a requirement for the M.D. degree remained the same. There was a reduction of thirty-one in the total enrolment of all classes including the intern year.

STUDENTS LEAVING SCHOOL DURING FIRST TWO YEARS

Of the 6,005 students selected for the freshman class for the session 1935-1936 it is interesting to note that 736 failed or for other reasons did not undertake sophomore studies and further that 1,019 had dropped out by the end of the second medical year. A compari-

TABLE 20.—*Students Leaving School During First Two Years*

	Class Entering 1935	Class Entering 1937
Freshmen enrolment	6,005	5,791
Junior enrolment	4,986	4,921
Loss during first two years	1,019	870
	−870	
	149 fewer students lost during first two years by the class entering in 1937	

son of the figures for 1935-1936 with those of 1937-1938 is made (table 20), as those entering in the former year would be completing their preclinical course by the latter year.

While 214 fewer freshmen were enrolled in 1937-1938 than in 1935-1936, there were also 149 fewer students who had discontinued their course by the end of the second year. From these figures it is clear that a decrease in the size of the entering class does not mean a corresponding reduction of the number of students in the clinical years. Further, the failure of 17 per cent of the students to continue beyond the second year suggests that many of those who were admitted lacked the ability to meet the exacting requirements of the medical curriculum. Decreases in the entering classes since 1935-1936 may indicate a more careful selection of students, which will result in a smaller number dropping out before the beginning of the junior class and a larger percentage of the class pursuing their course to graduation.

FEES

In table 21 the eighty-seven medical schools of the United States and Canada, including those offering courses in the basic medical sciences, have been grouped according to the tuition fees charged. To arrive at the figures listed, an average was computed of the resident fees for each school. Two schools have fees under $100. These were the Universities of North Dakota and Texas. Sixteen schools had fees over $500, namely the College of Medical Evangelists, Yale, George Wash-

TABLE 21.—*Fees, 1939-1940*

	Schools
Under $99	2
$100 to 199	7
200 to 299	23
300 to 399	14
400 to 499	25
500 or over	16
Total	87

Based on fees charged resident students.

ington, Johns Hopkins, Tufts, St. Louis, Columbia, Cornell, Long Island, New York Medical, New York University, Syracuse, Buffalo, Hahnemann, Pennsylvania and Pittsburgh. Thirty-one schools in the United States and five in Canada made an additional charge for nonresidents ranging from $37.50 each year by the University of Illinois College of Medicine to $400 exacted by Louisiana State University. Medical

school fees have been increased, as can be noted by a comparison with a similar tabulation. In 1939 there were three schools in the first group, eight in the second, twenty-two in the third, sixteen in the fourth, twenty-three in the fifth and fifteen in the sixth group.

The lowest nonresident fee in the United States was $37.50, and in Canada one school has a nonresident fee of $5 for the first year and $10 for the second, third and fourth years. Nine schools in the United States and Canada have a nonresident fee of $99 or less, eighteen have fees between $100 and $199, six from $200 to $299, two between $300 and $399, and one has a fee of $400.

The average resident fee charged in medical schools in the United States was $378, whereas in 1939 it was computed at $353 and in 1938 as $342.

CITIZENS OF THE UNITED STATES IN FACULTIES OF MEDICINE ABROAD

An inquiry into the number of citizens of the United States studying medicine in faculties of medicine abroad has been carried on by the Council on Medical Education and Hospitals since 1931, when it became evident that great numbers were going to Europe to pursue medical courses. In the spring of 1939, according to incomplete official reports, there were at least 500 at that time in Europe, studying principally in the extramural medical schools of Scotland. Completion of the professional education of these students was interrupted by the decision of the State Department to discontinue visas of passports to combat areas. Many of these applied to American schools for either advanced credit or admission to the entering class of 1939-1940, with little success. The medical schools of the United States already have many more applications for admission than they can possibly admit and at the time these students were seeking entrance their classes had already been filled to capacity. Some 390 students of the Scottish schools formed an association known as the American Medical Clubs of Scotland and appealed to professional educational agencies for assistance in placing these students. About fifty of the students in their fourth or fifth year were allowed to return to Scotland, leaving approximately 340 students unable to continue their education. The matter was considered at a meeting of the Council on Medical Education and Hospitals held Dec. 10, 1939, and it was felt that the question of accepting transfers from these institutions is a matter which should be left to the consideration of the individual medical schools of this country. Similar action was taken by other bodies. At a conference in March 1940 the State Department agreed that for the present at least it would issue visas for Switzerland for the students who wish to continue their studies in that country. It was estimated that about 100 of the group will avail themselves of this possibility. With the movement of events in Europe in recent months it is quite evident that it will be impossible for students from this country to obtain a medical education in Europe in the near future.

DESCRIPTION OF MEDICAL SCHOOLS

ARKANSAS

Little Rock

UNIVERSITY OF ARKANSAS SCHOOL OF MEDICINE, 1209 McAlmont Street.—Organized in 1879 as the Medical Department of Arkansas Industrial University. Present title in 1899. In 1911 the College of Physicians and Surgeons united with it and it became an integral part of the University of Arkansas. The first class was graduated in 1880. Clinical teaching was suspended in 1918 but resumed in 1923. Coeducational since organization. The faculty consists of 29 professors and 102 lecturers and assistants, total 131. The curriculum covers four years of nine months each. Entrance requirements are two years of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. The fees for the four years for residents of Arkansas are $280; nonresidents are charged $225 additional each year. The registration for 1939-1940 was 278; graduates, 63. The next session begins Sept. 25, 1940, and ends June 10, 1941. The Dean is Stuart P. Cromer, M.D.

CALIFORNIA

Berkeley-San Francisco

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL, University Campus, Berkeley; Medical Center, San Francisco.—Organized in 1864 as the Toland Medical College. The first class graduated in 1864. In 1873 it became the Medical Department of the University of California. In 1909, by legislative enactment, the College of Medicine of the University of Southern California, at Los Angeles, became a clinical department but was changed to a graduate school in 1914. In 1915 the Hahnemann Medical College of the Pacific was merged, and elective chairs in homeopathic materia medica, and therapeutics were provided. Coeducational since organization. Three years of collegiate work are required for admission. The work of the first year is given at Berkeley and that of the last three years at San Francisco. The faculty is composed of 154 professors and 302 associates and assistants, a total of 456. The course covers four years of eight months each, and an additional fifth year consisting of an internship in a hospital or of special work in a department of the medical school. Fees for the four years, respectively, for residents of California are $277, $240, $235 and $235; nonresidents are charged $300 additional each year. The registration for 1939-1940 was 241; graduates, 60. The next session begins Aug. 26, 1940, and ends May 24, 1941. The Acting Dean is President Robert G. Sproul, LL.D., Berkeley.

Loma Linda-Los Angeles

COLLEGE OF MEDICAL EVANGELISTS, Loma Linda; Boyle and Michigan Aves., Los Angeles.—Organized in 1909. The first class graduated in 1914. The laboratory departments are at Loma Linda, the clinical departments at Los Angeles. Coeducational since organization. The faculty is composed of 49 professors and 337 associates, assistants and instructors, a total of 386. The course covers a period of four years of nine months each and an additional year consisting of an internship in an approved hospital. Sixty-four semester hours of collegiate work are required for admission. The total fees are respectively, $612, $601, $611 and $611. The registration for 1939-1940 was 316; graduates, 101. The next session begins Sept. 2, 1940, and ends June 1, 1941. The President is Percy T. Magan, M.D., Los Angeles. The Dean is E. H. Risley, M.D., Loma Linda; the Associate Dean is W. E. Macpherson, M.D., Los Angeles.

Los Angeles

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE, 3551 University Avenue.—Organized in 1885 as the University of Southern California College of Medicine. First class graduated in 1888. In 1908, it became the Los Angeles Medical Department of the University of California. In 1909 the College of Physicians and Surgeons, established in 1904, became the Medical Department of the University of Southern California. Its activities were suspended in 1920; reorganized in May 1928, under present title. The faculty consists of 144 professors and 180 instructors, assistants and others, a total of 324. An internship is required for graduation. Three years of collegiate work are required for admission. Coeducational since organization. Annual fees amount to $452. The registration for 1939-1940 was 202; graduates, 43. The next session begins Sept. 16, 1940, and ends June 7, 1941. The Dean is Paul S. McKibben, Ph.D.

Stanford University-San Francisco

STANFORD UNIVERSITY SCHOOL OF MEDICINE, University Campus, Stanford University; 2398 Sacramento Street, San Francisco. The main buildings are in San Francisco. The laboratories of anatomy, bacteriology and experimental pathology, chemistry, and physiology are located on the campus at Stanford University, which is thirty miles southeast of San Francisco adjoining the City of Palo Alto. The post office is Stanford University. Organized in 1908, when by agreement the interests of Cooper Medical College were taken over. The first class graduated in 1913. Coeducational since organization. The faculty consists of 132 professors and 144 lecturers, assistants and others, a total of 276. Three years of collegiate work are required for admission. The course covers four years of eight and one-half months each, plus a fifth year of intern work. The fees for the four years, respectively, are $530, $458, $409 and $409. The registration for 1939-1940 was 240; graduates, 55. The next session begins Sept. 24, 1940, and ends June 15, 1941. The Dean is Loren Roscoe Chandler, M.D.

COLORADO

Denver

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE, 4200 East Ninth Avenue.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years except 1898 and 1899. Denver and Gross College of Medicine was merged, Jan. 1, 1911. Coeducational since organization. The faculty is composed of 57 professors and 130 lecturers, instructors and assistants, a total of 187. The course covers four years of nine months each. The entrance requirements are three years of collegiate work. The fees for residents of Colorado are, respectively, $301, $296, $281 and $281. Nonresidents are charged $245 additional each year. The registration for 1939-1940 was 204; graduates, 51. The next session begins Sept. 23, 1940, and ends June 9, 1941. The Dean is Maurice H. Rees, M.D.

CONNECTICUT

New Haven

YALE UNIVERSITY SCHOOL OF MEDICINE, 333 Cedar Street.—Chartered in 1810 as the Medical Institution of Yale College. Organized in 1812; instruction began in 1813; first class graduated in 1814. A new charter in 1879 changed the name to the Medical Department of Yale College. In 1884, the Connecticut Medical Society surrendered such authority as had been granted by the first charter. In 1887, Yale College became Yale University. Coeducational since 1916. The faculty consists of 178 professors and 220 lecturers and assistants, a total of 398. The requirements for admission are three years of collegiate work. The course covers four years of nine months each. The fees are, respectively, $505, $500, $500, and $520. The registration for 1939-1940 was 208, graduates, 44. The next session begins Sept. 23, 1940, and ends June 11, 1941. The Acting Dean is Francis G. Blake, M.D.

DISTRICT OF COLUMBIA

Washington

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, 3900 Reservoir Road, N.W.—Organized in 1851. First class graduated in 1852. The faculty is composed of 64 professors, 42 associate professors, 12 assistant professors, 5 adjunct professors, and 121 instructors, total 244. A baccalaureate degree is required for admission. The course of study covers four terms of eight and one-half months each. The present fees for each of the four sessions are $500. The registration for 1939-1940 was 326; graduates, 80. The next session begins Sept. 23, 1940, and ends June 1, 1941. The Dean is David V. McCauley, S.J., Ph.D.

GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, 1335 H Street, N.W.—Organized in 1825 as the Medical Department of Columbian College. Also authorized to use the name National Medical College. Classes were graduated in 1826 and in all subsequent years except in 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1903 it absorbed the National University Medical Department. In 1904, by an Act of Congress, the title of George Washington University was granted to the institution. Coeducational since 1884. The faculty is composed of 74 professors and 137 instructors, demonstrators and assistants, a total of 211. Two years of collegiate work are required for admission. The course covers four years of thirty-six weeks each. The fees for each of the four years are $550. The registration for 1939-1940 was 248; graduate, 48. The next session begins Sept. 23, 1940, and ends June 11, 1941. The Dean is Walter A. Bloedorn, M.D.

HOWARD UNIVERSITY COLLEGE OF MEDICINE, Fifth and W Streets, N.W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Coeducational since organization. Negro students compose a majority of those in attendance. The faculty comprises 30 professors and 67 instructors and assistants, 97 in all. The admission requirements are at least two years of collegiate work. The course covers four years of thirty-three weeks each. The fees are, respectively, $269, $269, $259 and $266. Registration for 1939-1940 was 119; graduates, 33. The next session begins Sept. 23, 1940, and ends June 13, 1941. The Dean is Numa P. G. Adams, M.D.

GEORGIA

Atlanta

EMORY UNIVERSITY SCHOOL OF MEDICINE, 50 Armstrong Street.—Organized in 1854 as the Atlanta Medical College. Classes graduated 1855 to 1861, when it suspended. Reorganized in 1865. A class graduated in 1865 and each subsequent year except 1874. In 1898 it merged with the Southern Medical College (organized in 1878), taking the name of Atlanta College of Physicians and Surgeons. In 1913 it merged with the Atlanta School of Medicine (organized in 1905), reassuming the name of Atlanta Medical College. Became the Medical Department of Emory University in 1915; assumed present title in 1917. Three years of collegiate work are required for admission. The faculty consists of 16 professors and 176 associates and assistants, a total of 192. The course of study is four years of thirty-two weeks each. The fees for each of the four years are $338. The registration for 1939-1940 was 219; graduates, 50. The next session begins Sept. 26, 1940, and ends June 9, 1941. The Dean is Russell H. Oppenheimer, M.D.

Augusta

UNIVERSITY OF GEORGIA SCHOOL OF MEDICINE, University Place.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia, the name being changed July 1, 1933, to the University of Georgia School of Medicine. Property transferred to the University in 1911. Classes were graduated in 1833 and all subsequent years except 1862 and 1863. Coeducation was begun in 1920. The faculty includes 60 professors and 29 assistants, 89 in all. Three years of collegiate work are required for admission. The course is four years of thirty-four weeks each. The fees for each of the four years are $225 for residents of Georgia, and $445 each year for nonresidents. The registration for 1939-1940 was 166; graduates, 33. The next session begins Sept. 26, 1940, and ends June 9, 1941. The Dean is G. Lombard Kelly, M.D.

ILLINOIS

Chicago

LOYOLA UNIVERSITY SCHOOL OF MEDICINE, 706 South Wolcott Avenue.—Incorporated in 1915 as the Bennett Medical College, and operated as an organic part of Loyola University, by virtue of an agreement entered into with the trustees of Bennett Medical College. Present title assumed in 1917. The Chicago College of Medicine and Surgery was purchased in 1917. The first class graduated in 1916. Coeducational. Three years of collegiate work are required for admission. The course of study is five years, including an internship. The faculty is composed of 88 in professorial rank and 209 others, a total of 297. The fees for each year are $510, $515, $455 and $372 respectively. The enrolment for 1939-1940 was 302; graduates, 115. Next session for seniors begins Oct. 21, 1940, for juniors Sept. 23, 1940, for freshmen and sophomores, Sept. 16, 1940, and ends June 11, 1941. The Dean is Louis D. Moorhead, M.D.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL, 303 East Chicago Avenue.—Organized in 1859 as the Medical Department of Lind University. First class graduated in 1860. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869 but retained the name of Chicago Medical College until 1891, when the present title was taken. Became an integral part of Northwestern University in 1905. Coeducational since 1926. The faculty comprises 136 professors, 356 associates and instructors, a total of 492. The requirement for admission is three years of collegiate work. The B.S. degree in medicine may be conferred before the end of the senior year. The course covers four years of eight and one-half months each and a fifth year spent in an approved hospital as an intern or in other practical work. The total fees are $414 each year. The registration for 1939-1940 was 556; graduates, 156. The next session begins Oct. 1, 1940, and ends June 14, 1941. The Dean is Irving S. Cutter, M.D.

UNIVERSITY OF CHICAGO, THE SCHOOL OF MEDICINE, Fifty-Eighth Street and Ellis Avenue, Chicago.—Organized in 1924, as a part of the Ogden Graduate School of Science of the University of Chicago. In 1932, when the University of Chicago reorganized its departments, the medical departments were included in the Biological Sciences Division and the school is now officially the School of Medicine of the Division of Biological Sciences of the Ogden Graduate School of Science. It is designated in publications as the School of Medicine of the University of Chicago. The work of the first two years in the medical courses has been given on the University Quadrangles since 1899; but the last two years were offered only at Rush Medical College which was affiliated with the university until 1927 when actual work in the clinical departments on the campus began. After that time, candidates for the degree of Doctor of Medicine could take the work of the first two years on the campus and the work of the third and fourth years either on the campus or at the Rush Medical College. Undergraduate courses in the clinical years at Rush Medical College will terminate in June 1942, when the students now enrolled will complete their studies. All undergraduate instruction will thereafter be given only on the campus, and Rush will become a postgraduate school. The faculty of the School of Medicine is composed of 108 professors, 163 associates, instructors and others, a total of 271. The requirements for admission are three years of collegiate work. The B.S. degree in medicine may be obtained during the second year. The curriculum covers twelve quarters of work. Students are admitted at the beginning of Spring, Summer and Autumn quarters. Sixty-five students are admitted to first year classes in each calendar year. The tuition fee for each of the four years is $450. The registration for 1939-1940 was 273; graduates, 35. The next session begins Sept. 30, 1940, and ends June 11, 1941. All correspondence relating to general policies should be addressed to W. H. Taliaferro, Ph.D., Dean of the Division of Biological Sciences, or to A. C. Bachmeyer, M.D., Associate Dean, and that pertaining to student affairs should be addressed to Victor Johnson, M.D., Dean of Medical Students.

RUSH MEDICAL COLLEGE, 1758 West Harrison Street, Chicago.—Chartered in 1837 and taught first class in 1843. First class graduated in 1844. In 1887 the College became the medical department of Lake Forest University, retaining, however, its self-government. This relationship was dissolved in April 1898, and in the same month affiliation with the University of Chicago was established. Since 1899 the first two years of the medical course have been given on the university campus. Clinical years only were offered at Rush Medical College. In May 1924, under a new agreement, the University of Chicago took over the work of Rush Medical College as a department of the university. The faculty is composed of 143 professors, 155 associates, instructors and others, a total of 298. The tuition fee is $450 yearly. The registration for 1939-1940 was 212; graduates, 106. The next session begins Sept. 30, 1940, and ends June 11, 1941. The school is in session all year except the month of September. By resolution of the board of trustees of the University of

Chicago, undergraduate courses in the clinical years will terminate in June 1942, when the students now enrolled in these courses will have completed their studies. The college is now designated The Rush Graduate School of Medicine. Graduate courses are being organized. Wilber E. Post, M.D., has been appointed dean of the Graduate School. The Acting Dean of Rush Medical College is Earle Gray, M.D.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, 1853 West Polk Street.—Organized in 1882 as the College of Physicians and Surgeons. The first class graduated in 1883. It became the Medical Department of the University of Illinois by affiliation in 1897. Relationship with the university was cancelled in June 1912, and was restored in March 1913, when the present title was assumed. Coeducational since 1898. Three years of collegiate work are required for admission. The curriculum covers four years of thirty-two weeks each, and a year of internship in an approved hospital. The B.S. degree in medicine is conferred at the end of the second year. The faculty is composed of 143 professors and 325 associates, instructors and assistants, a total of 468. The tuition is $150 a year for students who are residents of Illinois; $225 a year for nonresident students. The registration for 1930-1940 was 636; graduates, 162. The next session begins Sept. 23, 1940, and ends June 6, 1941. The Dean is David J. Davis, M.D.

INDIANA

Bloomington-Indianapolis

INDIANA UNIVERSITY SCHOOL OF MEDICINE, Bloomington; 1040 West Michigan Street, Indianapolis.—Organized in 1903 but did not give all the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1905 by the merger of the Medical College of Indiana organized in 1878), the Central College of Physicians and Surgeons (organized in 1879), and the Fort Wayne College of Medicine (organized in 1879) merged into it. The first class was graduated in 1908. Coeducational since organization. The faculty consists of 270 professors, lecturers, associates and assistants. Three years of collegiate work are required for admission. The B.S. degree in medicine is conferred. The work of the first year is given at Bloomington and the work of the next three years at Indianapolis. The regular fee for the medical course for all four years is $217 a year for residents of Indiana, and $422 for nonresidents. The registration for 1939-1940 was 460; graduates, 105. The next session begins Sept. 14, 1940, and ends June 2, 1941. The Dean is Willis D. Gatch, M.D., Indianapolis.

IOWA

Iowa City

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE, University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. Absorbed Drake University College of Medicine in 1913. Coeducational since 1870. The faculty is made up of 56 professors, 74 lecturers, demonstrators and assistants, a total of 130. Three years of collegiate work are required for admission. The B.A. degree in the combined course of liberal arts and medicine is conferred. The course of study covers four years of thirty-four weeks each. The tuition fee is $196 each year for residents of Iowa and $460 for nonresidents. The registration for 1939-1940 was 293; graduates, 71. The next session begins Sept. 26, 1940, and ends June 2, 1941. The Dean is Ewen Murchison MacEwen, M.D.

KANSAS

Lawrence-Kansas City

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE, Lawrence; 39th Street and Rainbow Boulevard, Kansas City.—Organized in 1880. It offered only the first two years of the medical course until 1905, when it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. Absorbed Kansas Medical College in 1913. The first class graduated in 1906. The clinical courses are given at Kansas City. Coeducational since 1880. The faculty includes 65 professors and 140 instructors, assistants and others, a total of 205. The requirement for admission is three years of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. The course covers four years of nine months each. The total fees for residents of the state are, respectively, $157, $163, $165 and $167. For nonresidents the fees are, respectively, $267, $343, $415 and $417. The registration for 1939-1940 was 294; graduates, 69. The next session begins Sept. 19, 1940, and ends June 9, 1941. The Dean is H. R. Wahl, M.D., Kansas City.

KENTUCKY

Louisville

UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, 101 West Chestnut Street.—Organized in 1837 as Louisville Medical Institute. The first class graduated in 1838, and a class graduated each subsequent year except 1863. In 1846 the name was changed to University of Louisville Medical Department. In 1907 it absorbed the Kentucky University Medical Department; in 1908, the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. In 1922 it changed its name to the University of Louisville School of Medicine. Coeducational since organization. Two years of collegiate work are the minimum requirement for admission. Preference is given applicants with a degree or three college years leading to a degree. The faculty numbers 77 professors, and 116 assistants, instructors and others, a total of 193. Course covers four years of thirty-two weeks each, exclusive of vacations and examinations. Fees are, respectively, $450, $450, $450 and $460. The registration for 1939-1940 was 341, graduates, 84. The next session begins Sept. 23, 1940, and ends May 31, 1941. The Dean is John Walker Moore, M.D.

LOUISIANA

New Orleans

LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE, 1542 Tulane Avenue.—Organized January 1931 as Louisiana State University Medical Center. Present title in 1939. Coeducational. First session October 1931, with students of first and third year. Faculty comprises 34 professors and 171 assistant professors, instructors and assistants, a total of 205. Course covers four years of no less than 32 weeks each. A minimum of three years' collegiate work is required for admission. Total fees, $133 each year for residents of Louisiana; additional tuition of $400 each year for nonresidents. The registration for 1939-1940 was 351; graduates, 136. The next session begins Sept. 9, 1940, and ends May 31, 1941. The Dean is B. I. Burns, M.D.

TULANE UNIVERSITY OF LOUISIANA SCHOOL OF MEDICINE, 1430 Tulane Avenue.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years except 1863-1865, inclusive. It was transferred to the Medical Department of the University of Louisiana in 1847, and became the Medical Department of the Tulane University of Louisiana in 1884. Present title in 1913. Coeducational since 1915. The faculty comprises 29 professors and 206 associate and assistant professors, instructors and assistants, a total of 235. The course covers four years of thirty-two weeks each. A minimum of three years of collegiate work is required for admission. Total fees are, respectively, $552, $552, $537 and $547. The registration for 1939-1940 was 471; graduates, 120. The next session begins Sept. 26, 1940, and ends June 11, 1941. The Dean is Maxwell E. Lapham, M.D.

MARYLAND

Baltimore

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE, 710 North Washington Street.—The nucleus of a Medical Faculty was constituted in 1883. Systematic postgraduate instruction in pathology and bacteriology was begun in 1886. School was fully organized and opened in 1893. The first class graduated in 1897. Coeducational since organization. The faculty consists of 71 professors and 405 instructors, assistants and others, a total of 476. The requirement for admission is a collegiate degree. The course extends over four years of eight and one-half months each. The total fees are, respectively, $621, $620, $620 and $620. The registration for 1939-1940 was 279; graduates, 68. The next session begins Sept. 24, 1940, and ends June 3, 1941. The Dean is Alan M. Chesney, M.D.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. Baltimore Medical College was merged with it in 1913. In 1915 the College of Physicians and Surgeons of Baltimore was merged and the present name assumed. Coeducational since 1918. The faculty consists of 49 professors and 272 associate and assistant professors and others, a total of 321. Three years of collegiate work are required for admission. The course covers four years of eight months each. The fees are, respectively, $506, $493, $492 and $512 for residents of the state; for nonresidents the fees are $150 additional each year. The registration for 1939-1940 was 370; graduates, 100. The next session begins Sept. 26, 1940 and ends June 7, 1941. The Acting Dean is H. Boyd Wylie, M.D.

MASSACHUSETTS

Boston

BOSTON UNIVERSITY SCHOOL OF MEDICINE, 80 East Concord Street.—Organized in 1873 as a homeopathic institution. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class was graduated in 1874. Became nonsectarian in 1918. Coeducational since organization. Three years of collegiate work are required for admission. The faculty includes 25 professors, 175 associates and others, a total of 200. The course covers four years. Total fees for each of the four years, respectively, are $479, $475, $475, $440. The registration for 1939-1940 was 205; graduates, 54. The next session begins Sept. 26, 1940, for 1st, 2d and 3d year students, and Sept. 16, 1940, for 4th year students, and ends June 16, 1941. The Dean is Alexander S. Begg, M.D.

HARVARD MEDICAL SCHOOL, 25 Shattuck Street.—Organized in 1782. The first class graduated in 1788. It has a faculty of 162 professors and 445 other instructors and assistants, a total of 607. Two years of collegiate work are required for admission. The total fees for each of the four years are $420, plus $5 the first year for matriculation. The registration for 1939-1940 was 522; graduates, 132. The next session begins Sept. 23, 1940, and ends June 19, 1941. The Dean is C. Sidney Burwell, M.D.

TUFTS COLLEGE MEDICAL SCHOOL, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. Coeducational since 1894. It has a faculty of 88 professors and 293 assistants, lecturers and others, a total of 381. A bachelor's degree is required for admission. The course covers four years of eight months each. The total fees for each of the four years are $512, $507, $507 and $517. The registration for 1939-1940 was 386; graduates, 96. The next session begins Sept. 18, 1940, and ends June 15, 1941. The Dean is A. Warren Stearns, M.D.

MICHIGAN

Ann Arbor

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.—Organized in 1850 as the University of Michigan Department of Medicine and Surgery. The first class graduated in 1851. Present title assumed in 1915. Coeducational since 1870. It has a faculty of 27 professors, 21 associate professors, 25 assistant professors, 126 assistants, instructors and lecturers; a total of 199. The entrance requirements are ninety semester hours. The curriculum covers four years of nine months each. The total fees for Michigan students are $250 for each of the four years, respectively; for nonresidents $400 a year. The registration for 1939-1940 was 466; graduates, 125. The next session begins Sept. 30, 1940, and ends June 21, 1941. The Dean is A. C. Furstenberg, M.D.

Detroit

WAYNE UNIVERSITY COLLEGE OF MEDICINE, 1516 St. Antoine Street.—Organized as the Detroit College of Medicine in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. Reorganized with the title of Detroit College of Medicine and Surgery in 1913. The first class graduated in 1886. In 1918 it became a municipal institution under the control of the Detroit Board of Education. In 1934 the name was changed by action of the Detroit Board of Education to Wayne University College of Medicine, as a part of the program of consolidation of the Detroit City Colleges into a university system. Coeducational since 1917. Entrance requirement is an academic degree or 90 semester hours of academic credit with "combined degree" guaranteed by school of arts and sciences. The faculty consists of 48 professors, 243 lecturers and others, a total of 291. The course covers four years of nine months each and a fifth year of intern work. The total fees for each of the first four years are, for Wayne County residents $325, and for nonresidents outside of Wayne County $425; for the fourth year a diploma fee of $10.00. The registration for 1939-1940 was 245; graduates, 60. The next session begins Sept. 16, 1940, and ends June 14, 1941. The Dean is Edgar H. Norris, M.D.

MINNESOTA

Minneapolis

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL.—Organized in 1883 as the University of Minnesota College of Medicine and Surgery, reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged. Present title in 1913. Coeducational since organization. The faculty includes 204 professors, of whom 77 are on full time appointment and 127 on part time, and 134 instructors, 29 of whom are on full-time appointment and 105 on part time, a total of 338. The curriculum covers four years of nine months each, and a year's internship in an approved hospital. The school is operated on the four-quarter plan. The entrance requirements are three years of university work, which must include six semester credits of rhetoric, eight semester credits of physics; thirteen credits of general chemistry, qualitative and quantitative analysis, organic and physical chemistry; eight credits of general zoology and genetics and eugenics; four credits of general psychology, and a reading knowledge of scientific German, with a "C" average in all subjects and in the sciences. Students are required to meet the requirements for a degree of B.S. or B.A. before receiving the degree of Bachelor of Medicine (M.B.), which is granted at the end of the four-year course. The M.D. degree is conferred after a year of intern work, of advanced laboratory work, or of public health work has been completed. Students are graduated at the end of any quarter in which work is completed and examinations passed. Total fees are $250 for residents and $400 for nonresidents, each year of three quarters. The registration for 1939-1940 was 454; graduates, 104. The next session begins Sept. 30, 1940, and ends June 13, 1941. The Dean is Harold S. Diehl, M.D.

MISSOURI

St. Louis

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE, 1402 South Grand Boulevard. Organized in 1901 as the Marion-Sims-Beaumont Medical College by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. First class graduated in 1902. It became the Medical School of St. Louis University in 1903. The faculty is composed of 76 professors and 247 instructors and assistants, a total of 323. The completion of three years of college study is the minimum admission requirement but students presenting meritorious credits in excess of the minimum are accepted by preference. The curriculum covers four years of thirty-two weeks each. The summer is optional and offers courses academically equivalent to those in the regular session. The total fees are, respectively, $530, $525, $525 and $565. The registration for 1939-1940 was 418; graduates, 106. The next session begins Sept. 24, 1940, and ends June 1, 1941. The Dean is Alphonse M. Schwitalla, S.J., Ph.D.

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE, Kingshighway and Euclid Avenue.—Organized in 1842 as the Medical Department of St. Louis University. The first class graduated in 1843. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. Coeducational since 1918. The faculty comprises 127 professors and 238 lecturers, instructors and others, a total of 365. Four years of collegiate work are required for admission. The B.S. degree in medicine is conferred at the end of the third or fourth year. The course is four years of eight months each. The total fees are, respectively, $524, $519, $519 and $424. The registration for 1939-1940 was 345; graduates, 95. The next session begins Sept. 26, 1940, and ends June 10, 1941. The Dean is Philip A. Shaffer, Ph.D.

NEBRASKA

Omaha

CREIGHTON UNIVERSITY SCHOOL OF MEDICINE, 306 North Fourteenth Street.—Organized in 1892 as the John A. Creighton Medical College. The first class graduated in 1893. Present title in 1921. Coeducational since organization. It has a faculty of 72 professors and 75 instructors, lecturers and assistants, a total of 147. Three years of collegiate work required for admission. The B.S. degree in medicine is conferred at the end of the second year. The curriculum covers four years of eight months each. The total fees for the four years are, respectively, $393, $393, $348 and $356, and $100 additional each year for students who have not taken the major part of their work at Creighton University School of Arts and Sciences. The registration for 1939-1940 was 231; graduates, 57. The next session begins Sept. 24, 1940, and ends June 5, 1941. The Dean is Charles M. Wilhelmj, M.D.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE, Forty-Second Street and Dewey Avenue.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. The instruction of the first two years was given at Lincoln and of the last two at Omaha until 1913, when the work of all four years was transferred to Omaha. Coeducational since 1882. The faculty is composed of 72 professors and 57 lecturers and instructors, a total of 129. Three years of collegiate work are required for admission. The B.S. degree in medicine is conferred at the end of the second year. The fees for the four years, respectively, are $219, $214, $214 and $214. The registration for 1939-1940 was 320; graduates, 76. The next session begins Sept. 23, 1940, and ends June 9, 1941. The Dean is C. W. M. Poynter, M.D.

NEW YORK

Albany

ALBANY MEDICAL COLLEGE, 47 New Scotland Avenue.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. In 1915 Union University assumed educational control. Coeducational since 1915. The faculty is composed of 75 professors and 122 instructors, assistants and others, a total of 197. A collegiate degree is required for admission. The curriculum covers four years of eight months each. The total fees are, respectively, $455, $430, $415 and $425. The registration for 1939-1940 was 128; graduates, 29. The next session begins Sept. 9, 1940, and ends June 9, 1941. The Dean is R. S. Cunningham, M.D.

Brooklyn

LONG ISLAND COLLEGE OF MEDICINE, 350 Henry Street.—Organized in 1858 as the Long Island College Hospital. The first class graduated in 1860 and the last class in 1930. Reorganized with a new charter in 1930 as the present institution. The first class graduated in 1931. Coeducational. It has a faculty of 119 professors, associate, assistant, clinical and assistant clinical professors, and 185 lecturers, associates, instructors, assistants and others, a total of 304. Ninety semester hours of collegiate work are required for admission. The course covers four years. The total fee for each of the four years is $610. The registration for 1939-1940 was 354; graduates, 81. The next session begins Sept. 9, 1940, for the fourth year and Sept. 23, 1940, for the other years, and ends June 7, 1941. The Dean is Jean Alonzo Curran, M.D.

Buffalo

UNIVERSITY OF BUFFALO SCHOOL OF MEDICINE, 24 High Street.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. Coeducational since organization. The faculty is composed of 86 professors and 193 associates, assistants and others, a total of 279. Two years of collegiate work are required for admission. The course covers four years of eight months each. The total fees are, respectively, $530, $525, $520 and $530. The registration for 1939-1940 was 259; graduates, 56. The next session begins Sept. 30, 1940, and ends June 7, 1941. The Dean is Edward W. Koch, M.D.

New York

COLUMBIA UNIVERSITY COLLEGE OF PHYSICIANS AND SURGEONS, 630 West One Hundred and Sixty-Eighth Street.—The medical faculty of Columbia College, then known as King's College, was organized in 1767.

Instruction was interrupted by the War of the Revolution. The faculty was reestablished in 1792 and merged in 1814 with the College of Physicians and Surgeons, which had received an independent charter in 1807. In 1860 the College of Physicians and Surgeons became the Medical Department of Columbia College. This merger became permanent by legislative enactment in 1891. Columbia College became Columbia University in 1896. The medical school has been coeducational since 1917. The faculty is composed of 278 professors and 549 instructors, demonstrators and others, a total of 827. Three years of collegiate work are required for admission. The work covers four years of eight months each. The total fees are, respectively, $545, $530, $530 and $550. The registration for 1939-1940 was 413; graduates, 102. The next session begins Sept. 19, 1940, and ends June 3, 1941. The Dean is Willard C. Rappleye, M.D.

NEW YORK MEDICAL COLLEGE, FLOWER AND FIFTH AVENUE HOSPITALS, 1 East 105th Street.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College of the State of New York. The title New York Homeopathic Medical College was assumed in 1869; the title New York Homeopathic Medical College and Hospital in 1887; the title New York Homeopathic Medical College and Flower Hospital in 1908; the title New York Medical College and Flower Hospital in 1936; the present title of New York Medical College, Flower and Fifth Avenue Hospitals, June 22, 1938. The first class graduated in 1861. Coeducational since 1919. A baccalaureate degree or its equivalent required for admission. The course covers four years of eight months each. It has a faculty of 69 professors and associate professors, 29 assistant professors, and 228 lecturers and assistants, a total of 326. The fees are, respectively, $645, $635, $635 and $665. The registration for 1939-1940 was 278; graduates, 50. The next session begins Sept. 16, 1940, and ends June 6, 1941. The President is Claude A. Burrett, M.D.

NEW YORK UNIVERSITY COLLEGE OF MEDICINE, 477 First Avenue.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. Named University and Bellevue Hospital Medical College from 1898 to February 1935 when it was changed to New York University College of Medicine. First class graduated in 1899. Coeducational since 1919. The faculty is composed of 140 professors, associate, assistant, clinical and assistant clinical professors, and 379 lecturers, instructors and others, a total of 519. The course covers four years. Entrance requirements are that all candidates must have completed three full years of study in an approved college of arts and sciences. The fees for each of the four years are $600. The registration for 1939-1940 was 495; graduates, 124. The next session begins Sept. 18, 1940, and ends June 11, 1941. The Dean is Currier McEwen, M.D.

CORNELL UNIVERSITY MEDICAL COLLEGE, 1300 York Avenue.—Organized in 1898. Coeducational since organization. The first year was given to approximately one-third of the class at Ithaca, but in 1938 this branch was discontinued and all work is now given in New York City. The faculty is composed of 135 professors and 304 assistants, lecturers, instructors, and others, a total of 439. All candidates for admission must be graduates of approved colleges or scientific schools, or seniors of approved colleges that will permit them to substitute the first year of this medical school for the fourth year of their college course and will confer on them the baccalaureate degree on the completion of the first year's work. The fees are, respectively: $620, $610, $515 and $525. The registration for 1939-1940 was 292; graduates, 70. The next session begins Sept. 17, 1940, and ends June 11, 1941. The Dean is William S. Ladd, M.D.

Rochester

UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE AND DENTISTRY, 260 Crittenden Boulevard.—Organized in 1925 as the Medical Department of the University of Rochester. Coeducational since organization. The faculty is composed of 66 professors, 200 lecturers, assistants, instructors and others, a total of 266. The work embaces a graded course of four years of nine months each. Three years of collegiate work are required for admission. The total fees for each year are $500. The registration for 1939-1940 was 200; graduates, 45. The next session begins Sept. 16, 1940, and ends June 14, 1941. The Dean is George Hoyt Whipple, M.D.

Syracuse

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE, 766 Irving Avenue.—Organized in 1872, when the Geneva Medical College, chartered in 1834, was removed to Syracuse, under the title "The College of Physicians and Surgeons of Syracuse University." Present title assumed in 1875, when a compulsory three-year graded course was established. The first class graduated in 1873 and a class graduated each subsequent year. In 1889 the amalgamation with the university was made complete. Course extended to four years in 1896. Coeducational since organization. The faculty is composed of 48 professors and 172 associate and assistant professors, lecturers and instructors, a total of 220. Three years of a recognized college course are required for admission. The course covers four years of thirty-four weeks each. The fee for each of the first three years is $500; for the fourth year, $510. The enrolment for 1939-1940 was 170; graduates, 40. The next session begins Sept. 16, 1940, and ends June 2, 1941. The Dean is H. G. Weiskotten, M.D.

NORTH CAROLINA

Durham

DUKE UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1925. The first class was admitted, Oct. 1, 1930. Coeducational. The faculty is composed of 12 professors and 144 associate and assistant professors, lecturers, instructors and assistants, a total of 156. The entrance requirements are ninety hours of collegiate work. The academic year consists of four quarters of eleven weeks each. Students either may study four quarters each year after the first year, and if satisfactory will receive the M.D. certificate after three and one quarter calendar years, or three quarters in each year, and if satisfactory will be graduated after four calendar years. The B.S. degree in medicine may be conferred for special work after six quarters. Students are urged to spend three years in hospital or laboratory work after graduation and must give assurance satisfactory to the executive committee that they will spend at least two years. The fees are $450 for each year of three quarters. The registration for 1939-1940 was 259; graduates, 58. The next session begins Oct. 3, 1940, and ends June 6, 1941. The Dean is Wilburt C. Davison, M.D.

OHIO

Cincinnati

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE, Eden and Bethesda Avenues.—Organized in 1909 by the union of the Medical College of Ohio (founded in 1819) with the Miami Medical College (founded in 1852). The Medical College of Ohio became the Medical Department of the University of Cincinnati in 1896. Under a similar agreement, March 2, 1909, the Miami Medical College also merged with the University when the title of Ohio-Miami Medical College of the University of Cincinnati was taken. Present title assumed in 1915. Coeducational since organization. Candidates for admission to the freshman class must present three years of college preparation of not less than ninety hours. Liberal Arts students of the University of Cincinnati may sign up for the seven-year combined Liberal Arts and Medical program. The B.Sc. degree is granted on the joint recommendation of the Faculties of the Colleges of Liberal Arts and Medicine at the end of the first medical year. The faculty consists of 112 professors, associate and assistant professors, 350 instructors, etc., a total of 462. The course covers four years of eight months each, on the completion of which the M.B. degree is granted. A year's internship in an approved hospital is required, on completion of which the M.D. degree is granted. Beginning with the fall session of 1940-1941 the fees will be as follows: For legal residents of Cincinnati $485 a year, plus laboratory fees, ($50 additional for those not legal residents of Cincinnati). The registration for 1939-1940 was 303; graduates, 66. The next session begins Sept. 20, 1940, and ends June 6, 1941. The Dean is Stanley Dorst, M.D.

Cleveland

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE, 2109 Adelbert Road.—Organized in 1843 as the Cleveland Medical College in cooperation with Western Reserve College. The first class graduated in 1844. It assumed the present title in 1881. In 1910 the Cleveland College of Physicians and Surgeons was merged. Coeducational since 1919. The faculty includes 89 professors and 233 lecturers, assistants and others, a total of 322. The curriculum covers three years of nine months each and one year of ten months. Three years of collegiate work are required for admission and a baccalaureate degree for graduation. The total fees are, respectively, $442, $430, $415 and $425. Beginning with the academic session of 1941-1942, the tuition fee will be increased by $100 for each year. The registration for 1939-1940 was 265; graduates, 58. The next session begins Sept. 19, 1940, and ends June 11, 1941. The Dean is Torald Sollmann, M.D.

Columbus

OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, Neil and Eleventh Avenues.—Organized in 1907 as the Starling-Ohio Medical College by the union of Starling Medical College (organized in 1847 by charter granted by the State Legislature changing the name from Willoughby Medical College, which was chartered March 3, 1834) with the Ohio Medical University (organized 1890). In 1914 it became an integral part of the Ohio State University with its present title. Coeducational since organization. The faculty consists of 76 professors, associate and assistant professors, 96 lecturers, instructors, demonstrators and others, a total of 172. Three years of collegiate work are required for admission. The course covers four years of thirty-four weeks each. Tuition fees are $327 for the first year, and $312 for each of the other three years for residents of Ohio, and $150 additional for nonresidents. The registration for 1939-1940 was 307; graduates, 77. The next session begins Oct. 1, 1940, and ends June 16, 1941. The Dean is J. H. J. Upham, M.D.

OKLAHOMA

Oklahoma City

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE, 801 East Thirteenth Street.—Organized in 1900. Until 1910 gave only the first two years of the medical course at Norman, Oklahoma, after which a clinical department was established at Oklahoma City. The first class graduated in 1911. Coeducational since organization. Since September 1928 the entire four-year course has been given in Oklahoma City. It has a faculty of 27 professors, 28 associate professors, 18 assistant professors, 32 associates, 15 lecturers, 36 instructors, and 24 assistants, a total of 180. Three years of college work are required for admission. The B.S. in Medicine will not be conferred after June 3, 1940. The course covers four years of nine months each. Fees: $50.00 "Maintenance and Incidental Fee" per semester, which began with the freshman class of 1939-1940. Other annual course fees average $128, $95, $53, and $58, in the order given, beginning with the freshman year. For students not residents of

Oklahoma there is a tuition charge of $350 a year, plus laboratory and course fees as indicated for the different years. The registration for 1939-1940 was 231; graduates, 52. The next session begins Sept. 16, 1940, and ends June 9, 1941. The Dean is Robert U. Patterson, M.D., C.M.

OREGON

Portland

UNIVERSITY OF OREGON MEDICAL SCHOOL, Marquam Hill.—Organized in 1887. The first class graduated in 1888, and a class graduated each subsequent year except 1898. The Willamette University Medical Department was merged in 1913. Coeducational since organization. It has a faculty of 91 professors and 164 lecturers, assistants and others, a total of 255. Entrance requirements are three years of collegiate work. The course covers four years of thirty-three weeks each. The total fees are, respectively, $380, $375, $370 and $376 for residents of Oregon, and $60 a year additional for nonresidents. The registration for 1939-1940 was 240; graduates, 49. The next session begins Oct. 1, 1940, and ends June 10, 1941. The Dean is Richard B. Dillehunt, M.D.

PENNSYLVANIA

Philadelphia

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL OF PHILADELPHIA, 235 North Fifteenth Street.—Organized in 1848 as The Homeopathic Medical College of Pennsylvania. In 1869 it united with The Hahnemann Medical College of Philadelphia, taking the latter title. Assumed present title in 1885. The first class graduated in 1849. Three years of collegiate work in a college of arts and sciences are required for admission. It has a faculty of 80 professors and 158 lecturers, instructors, and others, a total of 238. The work covers four years of eight months each. Fees are, respectively, $515, $512, $512 and $535. The registration for 1939-1940 was 543; graduates, 127. The next session begins Sept. 30, 1940, and ends June 12, 1941. The Dean is William A. Pearson, M.D.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA, 1025 Walnut Street.—Organized in 1825 as the Medical Department of Jefferson College, Canonsburg, Pa. It was chartered with its present title in 1838. Classes have been graduated annually beginning 1826. In 1838 a separate university charter was granted without change of title, since which time it has continued under the direction of its own board of trustees. It has a faculty of 83 professors, associate and assistant professors and 192 associates, lecturers, demonstrators and instructors, a total of 275. Four years of college work and a bachelor's degree are required for admission. The course of study covers four years of eight and one-half months each. The total fees are, respectively, $455, $440, $430 and $430. The registration for 1939-1940 was 497; graduates, 125. The next session begins Sept. 18, 1940, and ends June 6, 1941. The Dean is Henry K. Mohler, M.D.

TEMPLE UNIVERSITY SCHOOL OF MEDICINE, 3400 North Broad Street.—Organized in 1901. The first class graduated in 1904. Coeducational since organization. The faculty numbers 34 professors and 232 associates, assistants and others, a total of 266. Three years of collegiate work are required for admission. The fees for each of the four years, respectively, are $500, $490, $480 and $500. The registration for 1939-1940 was 466; graduates, 119. The next session begins Sept. 18, 1940, and ends June 12, 1941. The Dean is William N. Parkinson, M.D.

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE, Thirty-Sixth and Pine Streets.—Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772 and 1775-1779, inclusive. The original title was the Department of Medicine, College of Philadelphia. The present title was adopted in 1909. It granted the first medical diploma issued in America. In 1916 it took over the Medico-Chirurgical College of Philadelphia to develop it as a graduate school. Coeducational since 1914. The faculty consists of 106 professors, associate and assistant professors, and 412 lecturers, associates, instructors and others, a total of 518. Three years of collegiate work are required for admission. The course covers four years of thirty-three weeks each. The tuition fee is $500 each year, with a deposit fee of $15, a general fee including student health of $15 and a matriculation fee of $5. The registration for 1939-1940 was 491; graduates, 134. The next session begins Sept. 23, 1940, and ends June 11, 1941. The Dean is William Pepper, M.D.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Henry Avenue and Abbottsford Road, East Falls.—Organized in 1850. Classes were graduated in 1852 and in all subsequent years except 1862. It has a faculty of 48 professors and 80 assistants, lecturers and others, in all, 128. Three years of collegiate work are required for admission. The curriculum covers four years of eight and one-half months each. Total fees are, respectively, $447, $433, $433, $455. The registration for 1939-1940 was 103; graduates, 18. The next session begins Sept. 18, 1940, and ends June 11, 1941. The Interim Dean is Catharine Macfarlane, M.D.

Pittsburgh

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE, Bigelow Boulevard.—Organized in 1886, as the Western Pennsylvania Medical College and in 1908 became an integral part of the University of Pittsburgh, removing to the university campus in 1910. The first class graduated in 1887. Coeducational since 1899. The faculty is composed of 31 professors and 331 associates, assistants and others, a total of 362. Entrance requirements are two years of collegiate work. The course of study is four years of eight months each. The total fees are $500 each year. The registration for 1939-1940 was 257; graduates, 46. The next session begins Sept. 23, 1940, and ends June 11, 1941. The Dean is W. S. McEllroy, M.D.

SOUTH CAROLINA

Charleston

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA, 16 Lucas Street.—Organized in 1823 as the Medical College of South Carolina. The first class graduated in 1825. In 1832 a medical college bearing the present title was chartered and the two schools continued as separate institutions until they were merged in 1838. Classes were graduated in all years except 1862 to 1865, inclusive. In 1913, by legislative enactment, it became a state institution. Coeducational from 1895 to 1912, when privileges for women were withdrawn, being restored in 1917. It has a faculty of 46 professors and 45 associates, instructors and others, a total of 91. The course covers four years of eight months each. Three years of collegiate work are required for admission. The total fees are $272 each year. Fees for nonresidents of the state, $422 each year. The enrolment for 1939-1940 was 171; graduates, 40. The next session begins Sept. 26, 1940, and ends June 5, 1941. The Dean is Robert Wilson, M.D.

TENNESSEE

Memphis

UNIVERSITY OF TENNESSEE COLLEGE OF MEDICINE, 874 Union Avenue.—Organized in 1876 at Nashville as Nashville Medical College. First class graduated 1877, and a class graduated each subsequent year. Became Medical Department of University of Tennessee in 1879. In 1909 it united with the Medical Department of the University of Nashville to form the joint Medical Department of the Universities of Nashville and Tennessee. This union was dissolved in 1911. The trustees of the University of Nashville by formal action of that board named the University of Tennessee College of Medicine as its legal successor. In 1911 it moved to Memphis, where it united with the College of Physicians and Surgeons. The Memphis Hospital Medical College was merged in 1913. Lincoln Memorial University Medical Department was merged in 1914. Coeducational since 1911. The faculty includes 104 professors and 146 assistants, instructors and others, a total of 250. Two years of collegiate work are required for admission. The B.S. degree in medicine is conferred at the end of the second year. The fees are $120 quarterly. For residents of the state the charge is reduced $50 each quarter. The registration for 1939-1940 was 439; graduates, 96. During the academic year of 1940-1941 the quarters begin July 5, Sept. 23, Dec. 30 and March 20, and end Sept. 21, Dec. 11, March 19 and June 7. The Dean is O. W. Hyman, Ph.D.

Nashville

MEHARRY MEDICAL COLLEGE, Eighteenth Avenue, North and Heffernan Street. (For Negro Youth.)—This school was organized in 1876 as the Meharry Medical Department of Central Tennessee College, which became Walden University in 1900. First class graduated in 1877. Obtained new charter independent of Walden University in 1915. Coeducational since 1876. The faculty is made up of 49 professors and 30 instructors and lecturers, 79 in all. Three years' work in a college of liberal arts is required for admission. The curriculum covers four years of thirty-two weeks each. Tuition fees are, respectively, $300, $290, $280 and $290 each year. The registration for 1939-1940 was 196; graduates 39. The next session begins Oct. 1, 1940, and ends May 27, 1941. The Dean is Edward L. Turner, M.D.

VANDERBILT UNIVERSITY SCHOOL OF MEDICINE, Twenty-First Street at Edgehill.—This school was founded in 1874. The first class graduated in 1875. Coeducational since September 1925. The faculty numbers 239. For matriculation, students must be graduates of collegiate institutions of recognized standing or seniors in absentia, who will receive the bachelor degree from their college after having completed successfully at least one year of work in the school of medicine. The course covers four years of nearly nine months each. The total fees are, respectively, $415, $415, $415 and $420. The registration for 1939-1940 was 200; graduates, 54. The next session begins Sept. 23, 1940, and ends June 11, 1941. The Dean is Walter S. Leathers, M.D.

TEXAS

Dallas

BAYLOR UNIVERSITY COLLEGE OF MEDICINE, 810 College Avenue.—Organized in 1900 as the University of Dallas Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University. It acquired the charter of Dallas Medical College in 1904. Coeducational since organization. The first class graduated in 1901. The faculty consists of 113 professors and 103 instructors and assistants, a total of 216. Entrance requirements are three years of collegiate work. The course covers four years of eight months each. The fees are, respectively, $414, $404, $399 and $424. The registration for 1939-1940 was 305; graduates, 75. The next session begins Sept. 30, 1940, and ends June 2, 1941. The Dean is W. H. Moursund, M.D.

Galveston

UNIVERSITY OF TEXAS SCHOOL OF MEDICINE, 912 Avenue B.—Organized in 1891. The first class graduated in 1892. Coeducational since organization. It has a faculty of 45 professors and 53 instructors and lec-

turers, a total of 98. The curriculum covers four years of eight months each. The entrance requirement is three years of collegiate work. The total fees are, respectively, $88, $92, $100 and $102. There is a matriculation fee of $50 for each year. The registration for 1939-1940 was 374; graduates, 90. The next session begins Oct. 1, 1940, and ends May 31, 1941. The Dean is John W. Spies, M.D.

VERMONT

Burlington

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE, Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. Coeducational since 1920. It has a faculty of 61 professors and 53 instructors, and assistants, a total of 114. Three years of collegiate work are required for admission. The course of study covers four years of nine months each. For residents of Vermont the tuition fee is $300 each session. Nonresidents are charged an additional $150 each session. A $25 fee is charged for the doctor's degree. The registration for 1939-1940 was 131; graduates, 36. The next session begins Sept. 18, 1940, and ends June 16, 1941. The Dean is Hardy A. Kemp, M.D.

VIRGINIA

Charlottesville

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. Coeducational since the session of 1920-1921. It has a faculty of 46 professors and 40 lecturers, instructors, assistants and others, a total of 86. Three years of college work are required for admission. For residents of Virginia the total fees are, respectively, $419, $401, $366 and $366. Nonresidents are charged an additional $50 each year. The registration for 1939-1940 was 254; graduates, 62. The next session begins Sept. 12, 1940, and ends June 9, 1941. The Dean is Harvey Ernest Jordan, Ph.D.

Richmond

MEDICAL COLLEGE OF VIRGINIA, Twelfth and Marshall Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. In 1913 the University College of Medicine was merged. In 1914 the North Carolina Medical College was merged. Coeducational since 1918. Classes were graduated in 1839 and in all subsequent years. It has a faculty of 80 professors and 126 lecturers, instructors and others, a total of 206. Three years of collegiate work are required for admission. The course covers four years of eight and one-half months each. Total fees are, respectively, $344, $344, $329 and $361. Nonresidents are charged an additional $125 each year. The registration for 1939-1940 was 295; graduates, 66. The next session begins Sept. 3, 1940, for the first year class; Sept. 16, 1940, for all other classes, and ends June 3, 1941. The Dean is Lee E. Sutton Jr., M.D.

WISCONSIN

Madison

UNIVERSITY OF WISCONSIN MEDICAL SCHOOL, 408 North Charter Street.—Organized in 1907. Gave only the first two years of the medical course until 1925, when the clinical years were added. Coeducational since organization. Three years of collegiate work are required for admission. The B.S. degree in medical science is conferred at the end of the first year. It has a faculty of 64 professors and 67 lecturers, instructors and others, a total of 131. The fees are, respectively, $222, $212, $182 and $120. An additional fee of $200 each year is charged nonresidents. The registration for 1939-1940 was 262; graduates 48. The next session begins Sept. 25, 1940, and ends June 23, 1941. The Dean is William S. Middleton, M.D.

Milwaukee

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, 561 North Fifteenth Street.—Organized in December 1912, by the merger of the Milwaukee Medical College and the Wisconsin College of Physicians and Surgeons. Coeducational since organization. It has a faculty of 178. Three years of collegiate work are required for admission. The curriculum covers four years of eight and a half months each, and one years' internship in an approved hospital. The fees are as follows: first year, $462; second year, $450; third year, $450; fourth year, $400. The registration for 1939-1940 was 313; graduates, 72. The next session begins Sept. 30, 1940, and ends June 11, 1941. The Dean is Eben J. Carey, M.D.

CANADA

Alberta

UNIVERSITY OF ALBERTA FACULTY OF MEDICINE, Edmonton.—Organized in 1913. Coeducational since organization. Has given the complete six-year medical course since 1924. The faculty includes 23 full time and 45 part time professors, instructors, assistants and others, a total of 68. Tuition for the first year is $150, for the second, third and fourth years $215, for the fifth and sixth years $225. The registration for 1939-1940 was 233; graduates, 35. The next session begins Sept. 24, 1940, and ends May 13, 1941. The Acting Dean is John James Ower, M.D.

Manitoba

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE, Bannatyne Avenue, Winnipeg. Organized in 1883 as Manitoba Medical College; first class graduated in 1886, and a class graduated each subsequent year. The college transferred all its property to the University of Manitoba in 1919 and assumed the present title. Coeducational since organization. The faculty includes 26 professors and 80 instructors and assistants, total of 106. Matriculation requirements include two years of collegiate work in the faculty of arts and science of a recognized university. The course extends over four years of eight months each and a hospital internship. The total fees are, respectively, $298, $293, $293, $293, $77. The registration for 1939-1940 was 218; graduates, 45. The next session begins Sept. 20, 1940, and ends May 14, 1941. The Dean is A. T. Mathers, M.D.

Nova Scotia

DALHOUSIE UNIVERSITY FACULTY OF MEDICINE, Morris Street, Halifax.—Organized in 1867. Incorporated as the Halifax Medical College in 1875. Reorganized as an examining faculty, separate from the Halifax Medical College, in 1885. In 1911, in accordance with an agreement between the Governors of Dalhousie University and the Corporation of the Halifax Medical College, the work of the latter institution was discontinued and a full teaching faculty was established by the university. First class graduated in 1872. Coeducational since 1871. It has a faculty of 34 professors and 34 demonstrators, lecturers and others, a total of 68. Requires for matriculation two years of arts. The medical course covers four years and a hospital internship of one year. The fees are $317, $322, $317, $307 and $307 for each year, respectively; $250 additional registration fee payable by students outside the British Empire. The registration for 1939-1940 was 183; graduates, 35. The next session begins Sept. 10, 1940, and ends May 13, 1941. The Dean is H. G. Grant, M.D.

Ontario

QUEEN'S UNIVERSITY FACULTY OF MEDICINE, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 60. The fee for the first year is $233 and $255 for each of the other five years. The course covers six years of thirty teaching weeks each. The registration for 1939-1940 was 278; graduates, 62. The next session begins Sept. 26, 1940, and ends May 16, 1941. The Dean is Frederick Etherington, M.D.

UNIVERSITY OF WESTERN ONTARIO MEDICAL SCHOOL, Ottaway Avenue, London.—Organized in 1881 as the Western University Faculty of Medicine; first class graduated in 1883, and a class graduated each subsequent year. Present title in 1923. The medical school has been under the control of the Board of Governors of the University of Western Ontario since 1913. Coeducational since 1913. The faculty numbers 88. The course of study covers six years of eight months each. The total fees to residents of Canada for the last four years, respectively, are $291, $287, $295 and $295; nonresidents are charged $516, $512, $520 and $520 for each of the last four years. The registration for 1939-1940 was 223; graduates, 31. The next session begins Sept. 16, 1940, and ends May 17, 1941. The Dean is F. J. H. Campbell, M.D.

UNIVERSITY OF TORONTO FACULTY OF MEDICINE, Toronto.—Organized in 1843 as the Medical Faculty of King's College. Abolished in 1853. Reestablished in 1887. In 1902 it absorbed Victoria University Medical Department, and in 1903 it absorbed the Medical Faculty of Trinity University. Coeducational since 1903. The course of study covers six years of eight months each. The B.Sc. (Med.) degree is conferred at the end of the third or sixth year. It has a faculty of 74 professors and 348 lecturers, associates and others, a total of 422. The fees are $226 for the first year; for the second, $389; $296 for the third year, $321 for the fourth and fifth years, and $353 for the sixth year. The registration for 1939-1940 was 777; graduates, 138. The next session begins Sept. 24, 1940, and ends May 17, 1941. The Dean is W. E. Gallie, M.D.

Quebec

LAVAL UNIVERSITY FACULTY OF MEDICINE, Quebec.—The Quebec School of Medicine, organized in 1848, became in 1852 the Laval University Faculty of Medicine; first class graduated in 1855, and a class graduated each subsequent year. The faculty numbers 81. The fees for each of the medical years are $175 for residents of Canada. Nonresidents are charged an extra fee of $175 each year. The premedical requirement is a B.A. degree or its equivalent. The registration for 1939-1940 was 314; graduates, 51. The next session begins Sept. 11, 1940, and ends May 30, 1941. The Secretary General of the University is Rev. Aimé Labrie.

MCGILL UNIVERSITY FACULTY OF MEDICINE, 3640 University Street, Montreal.—Founded in 1823 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-1839, owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop's College. Coeducational since 1919. Three years of collegiate work are required for admission. The M.D. is conferred upon the completion of four sessions of 36 teaching weeks. Graduates are not eligible for licensure until they have satisfactorily completed one year of internship in an approved hospital. The faculty consists of 59 professors and 156 lecturers and others, a total of 215. The total fees for each of the four medical years are $391 plus $100 for non-British subjects. The registration for 1939-1940 was 444; graduates, 161. The

next session begins Sept. 4, 1940, and ends May 31, 1941. The Dean is J. C. Simpson, LL.D.

UNIVERSITY OF MONTREAL, FACULTY OF MEDICINE, 1265 St. Denis Street, Montreal.—Organized in 1843 as the Montreal School of Medicine and Surgery. In 1891, by Act of Parliament, the Medical Faculty of Laval University (organized in 1878) was absorbed. Present name by Act of Parliament in 1920. A class was graduated in 1843 and each subsequent year. Coeducational since 1925. The faculty numbers 135. The B.A. or B.S. degree, or its equivalent, is a prerequisite to the premedical year, which precedes a five year medical course, the fifth year being a compulsory internship year. The total fees for each of the five years respectively are $245, $229, $271, $235, $218. The registration for 1939-1940 was 205; graduates 48. The next session begins Sept. 15, 1940, and ends June 15, 1941. The Dean is Albert LeSage, M.D.

DESCRIPTION OF SCHOOLS OF THE BASIC MEDICAL SCIENCES

ALABAMA

University (Tuscaloosa)

UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE.—Organized in 1859 at Mobile as the Medical College of Alabama. Classes graduated in 1861 and subsequent years excepting 1862 to 1868, inclusive. Reorganized in 1897 as the medical department of the University of Alabama. Present title assumed in 1907, when all property was transferred to the University of Alabama. In 1920 clinical teaching was suspended and the medical school was removed to the university campus near Tuscaloosa. Coeducational since 1920. Minimum entrance requirements are three years of collegiate work. The course of study covers two years of thirty-six weeks each. The faculty includes 15 professors and 12 instructors, assistants, and others, a total of 27. The tuition fees are $271 each year. Each class is limited to fifty students. The registration for 1939-1940 was 103. The next session begins Sept. 11, 1940, and ends May 27, 1941. The Dean is Stuart Graves, M.D.

MISSISSIPPI

University

UNIVERSITY OF MISSISSIPPI SCHOOL OF MEDICINE.—Organized in 1903. Coeducational since organization. Gives only the first two years of the medical course. A clinical department was established at Vicksburg in 1908 but was discontinued in 1910 after graduating one class. The session extends over eight and one-half months. Entrance requirement is three years of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. The faculty includes 8 professors, 2 assistant professors, 1 associate professor, 1 adjunct professor, 20 instructors, assistants and others, a total of 32. The total fees for the first year are $353, and for the second year $325. The nonresident fee is $50 additional each year. The registration for 1939-1940 was 44. The next session begins Sept. 16, 1940, and ends June 2, 1941. The Dean is B. S. Guyton, M.D.

MISSOURI

Columbia

UNIVERSITY OF MISSOURI SCHOOL OF MEDICINE.—Organized at St. Louis in 1845; was discontinued in 1855 but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. Coeducational since 1872. The faculty includes 21 professors and 14 instructors, lecturers and others, a total of 35. The entrance requirements are 90 semester hours of collegiate work. The B.S. degree in medicine is conferred at the end of the second year. Total fees for the first year are $191, for the second, $170. The registration for 1939-1940 was 75. The next session begins Sept. 16, 1940, and ends June 13, 1941. The Dean is Dudley S. Conley, M.D.

NEW HAMPSHIRE

Hanover

DARTMOUTH MEDICAL SCHOOL.—Organized by Dr. Nathan Smith in 1797. The first class graduated in 1798. It is under the control of the trustees of Dartmouth College. Courses of the third and fourth year were discontinued in 1914. The faculty consists of 21 professors and 11 instructors, a total of 32. Three years of collegiate work and candidacy for the bachelor's degree are required for admission. The course covers nine calendar months in each year, or eight months of actual teaching. Candidates for the A.B. degree in Dartmouth College may substitute the work of the first year in medicine for that of the senior year in the academic department. The tuition is $450 for each year. The registration for 1939-1940 was 42. The next session begins Sept. 19, 1940, and ends June 13, 1941. The Dean is John P. Bowler, M.D.

NORTH CAROLINA

Chapel Hill

UNIVERSITY OF NORTH CAROLINA SCHOOL OF MEDICINE.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. Coeducational since 1914. Three years of collegiate work are required for admission. The B.S. degree in medicine is conferred at the end of the first year. The faculty is composed of 15 professors and 9 instructors, a total of 24. The fees for each year are $300 for residents; nonresidents, an additional fee of $100. The registration for 1939-1940 was 79. The next session begins Sept. 24, 1940, and ends June 8, 1941. The Acting Dean is W. Reese Berryhill, M.D.

Wake Forest

WAKE FOREST COLLEGE SCHOOL OF MEDICAL SCIENCES.—Organized in 1902. The faculty numbers 16 professors, and 29 assistant professors, instructors, assistants and lecturers, making a total of 45. Only the first two years of the medical course is offered. On Aug. 4, 1939, the Board of Trustees accepted the resources of the Bowman Gray Foundation in Winston-Salem and authorized the school to be moved to that city and expanded to offer instruction to include the entire four years leading to the M.D. degree. The physical plant is now under construction. The date of the beginning of the clinical years has not been announced. Ninety semester hours of collegiate work are required for admission. The B.S. degree is given after the completion of the first year in the School of Medical Sciences. Each annual course extends over nine months. Tuition for each year is $300. The registration for 1939-1940 was 60. The next session begins Sept. 10, 1940, and ends June 2, 1941. The Dean is C. C. Carpenter, M.D.

NORTH DAKOTA

Grand Forks

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE.—Organized in 1905. Offers only the first two years of the medical course. Coeducational since organization. Three years' work in a college of liberal arts is required for admission. The B.S degree in combined arts-medical course is conferred at the end of the second year. The faculty consists of 8 professors and 8 instructors, a total of 16. The fees are $80 each year for resident students and $165 for nonresidents. The registration for 1939-1940 was 49. The next session begins Sept. 16, 1940, and ends June 10, 1941. The Dean is H. E. French, M.D.

SOUTH DAKOTA

Vermillion

UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICAL SCIENCES.—Organized in 1907 as the University of South Dakota School of Medicine. Present title in 1937. Coeducational since organization. Offers only the first two years of the medical course. Three years' work in a college of liberal arts is required for admission. Students who complete the third year of premedical work in the College of Arts and Sciences at the University of South Dakota may apply the work of the first year of medicine to the A.B. degree. The B.S. degree is conferred at the end of the second year on those students who do not hold a previous Bachelor's degree. The faculty numbers 18. The tuition is $150 each year for residents and $250 for nonresidents. The registration for 1939-1940 was 50. The next session begins Sept. 18, 1940, and ends June 9, 1941. The Dean is Joseph C. Ohlmacher, M.D.

UTAH

Salt Lake City

UNIVERSITY OF UTAH SCHOOL OF MEDICINE, University Street.—Organized in 1906. Coeducational since organization. Gives only first two years of medical course. Each school year covers thirty-six weeks. Three years of collegiate work are required for admission. The medical faculty consists of 11 professors, 2 instructors, 20 lecturers and demonstrators, and 5 fellows, assistants, and technicians, a total of 38. The fees for each year are $229. There is a nonresident fee of $25 for each quarter. The registration for 1939-1940 was 56. The next session begins Sept. 23, 1940, and ends May 31, 1941. The Dean is L. L. Daines, M.D.

WEST VIRGINIA

Morgantown

WEST VIRGINIA UNIVERSITY SCHOOL OF MEDICINE.—Organized in 1902, gives the first two years of the medical course. Coeducational since organization. Three years of collegiate work are required for admission. The B. S. degree in medicine is conferred at the end of the second year. Session extends through nine months. Faculty numbers 24. Fees for residents of the state are, respectively, $254 and $264; nonresidents, $150 additional each year. The registration for 1939-1940 was 45. The next session begins Sept. 17, 1940, and ends June 7, 1941. The Dean is Edward J. Van Liere, M.D.

CANADA

Saskatchewan

UNIVERSITY OF SASKATCHEWAN SCHOOL OF MEDICAL SCIENCES, Saskatoon.—Organized in 1926. Coeducational. Offers the first two years of the medical course. Students require three more years of medicine for graduation. Two years of collegiate work are required for admission. The B.A. degree is conferred at the end of the second year. The medical faculty includes 7 professors and 4 lecturers and assistants, a total of 11. The fees are $150 for each year. The registration for 1939-1940 was 48. The next session begins Sept. 23, 1940, and ends May 9, 1941. The Dean is W. S. Lindsay, M.B.

GRADUATE MEDICAL EDUCATION

Continuation Study for Practicing Physicians in the United States, 1939-1940

During a period of two years, beginning in October 1937, forty-six states and the District of Columbia were visited by a representative of the Council on Medical Education and Hospitals for the collection of data on the facilities available and programs in effect throughout the country for the continuing education of practicing physicians. The two states not visited were Delaware and Nevada. Progress reports on graduate activities of medical societies, medical schools, hospitals and other educational institutions appeared in the Educational Numbers of THE JOURNAL of 1938 [1] and 1939.[2] A review of the Association's interest in graduate medical education since 1913 was published in composite form by the Council in May 1940.[3]

Presented herewith is a report on similar opportunities for continuation study offered during the fiscal year July 1, 1939, to July 1, 1940. The data which form the basis of this presentation were obtained by correspondence and questionnaire.

ORGANIZATION AND ADMINISTRATION

Opportunities for practicing physicians to engage in continuation study are outlined in tables 1-A, pages 710-712, and 1-B, pages 714-719, and table 2, pages 721-724. Courses reported in table 1-A were of an itinerant character, in that the instruction was taken to the physician in or near his local community. Centers listed in table 1-B provided ample facilities for clinical instruction. With certain exceptions, in the first type of course the instructor does most of the traveling, while in the latter the physician desiring continuation study frequently travels to the center where clinical teaching may be emphasized over longer periods. There were reported 129 programs for continuation study in forty-one states and the District of Columbia, including four states which made provision for such opportunities outside their states.

Forty-one itinerant programs of continuation study for practicing physicians were offered in or near the home communities of physicians in thirty-one states. Thirty-one of the courses offered were sponsored either singly or jointly by state medical societies. State boards of health sponsored twenty-two. Extension divisions of universities and medical schools sponsored four courses each. Of these forty-one itinerant study courses, twenty were directed by state medical societies, twelve by state boards of health, five by extension divisions of universities and four by tuberculosis organizations.

Continuation study in centers where there are ample facilities for clinical instruction is outlined in table 1-B, in which are listed eighty-eight courses offered in thirty-one states and the District of Columbia. Four other states provided opportunity for physicians to continue professional study elsewhere. Fifty-two courses were sponsored by medical schools, including six graduate and postgraduate schools, twenty-four by medical and clinical societies and academies of medicine, fifteen by departments of health, three by the Commonwealth Fund of New York and the Bingham Associates Fund, eight by hospitals, three by a university center for continuation study, three by universities not having medical departments and one each by a university extension division and an institute of technology.

Medical school graduate programs were usually directed by the dean of the school, although sometimes the professor in charge of the course, the chairman of a postgraduate committee or of a department of postgraduate education in the medical school or the director of the division of graduate study would act. Courses sponsored by medical societies were generally directed by committee chairmen.

METHODS OF INSTRUCTION

States which provided opportunities for physicians to continue professional study near their home communities offered general subjects of medicine in sixteen courses, obstetrics and gynecology in fifteen, pediatrics in fifteen, general and traumatic surgery in five and special subjects in thirteen.

Instruction was given for four or more days, in succession or intermittently, in twenty-one of these itinerant courses. Clinics, symposiums or conferences, in addition to lectures, were included in thirty-six courses. Local hospitals were utilized in thirty of the forty-one programs. Whenever hospitals were not suitable or available, public buildings, hotels, halls, club rooms and other local facilities were used. Approximately one half of the instructors engaged as field clinicians came from within the state where continuation study was offered, and in approximately one half of the courses out of state physicians participated. Of the total, three fourths of the instructors were from medical schools.

Where continuation study featured clinical instruction at one center, such subjects as general medicine, obstetrics, pediatrics and surgery were included. All but ten of the graduate programs of longer duration emphasized clinical instruction. Opportunities were given for continuing study of special as well as general subjects of medicine, including allergy, anesthesia, broncho-esophagology, cardiology, electrocardiography, endocrinology, forensic medicine, genito-urinary surgery, gastroscopy, gynecology, hematology, industrial medicine, laboratory procedures, metabolism, ophthalmology, otolaryngology, physical therapy, psychiatry, public health, radiology, tuberculosis, urology and venereal diseases. Other special courses were available at thirteen medical schools and universities. Forty-three medical schools participated in postgraduate programs in medical centers. In only ten centers was instruction in preclinical subjects offered.

The duration of clinical study varied from five days to one year. Forty-seven of the eighty-eight courses reported lasted from five days to three weeks. Twenty-three programs were conducted over periods of four weeks or more. Thirteen courses fell within both categories and five others were of variable duration. The time of year in which instruction was given varied considerably. In some of the medical schools it was found necessary to accept physicians for short terms of graduate study during vacation periods in order to accommodate them when undergraduate students were not in attendance.

Something more than didactic lectures was included in the courses given with a few exceptions. Laboratory demonstrations, clinics, ward rounds, round table discussions, clinical pathologic and other conferences, symposiums and bedside teaching as well as other practical

(Continued on page 713)

1. J. A. M. A. **111**:801 (Aug. 27) 1938.
2. J. A. M. A. **113**:773 (Aug. 26) 1939.
3. Graduate Medical Education in the United States: I. Continuation Study for Practicing Physicians, 1937 to 1940, American Medical Association, 1940.

TABLE 1.—CONTINUATION COURSES FOR PRACTICING PHYSICIANS, 1939-1940

A. In Proximity to Their Homes

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Persons Eligible for Admission	Registration Fee	Approximate No. M.D.'s Attending	Additional Contributing Agencies and Funds
Alabama 30 centers (6 circuits)	St. Med. Assn., St. Dept. Public Health, Med. Ext. Div., Tulane U. of La.	Director, Med. Ext. Div., Tulane U. of La.	General Medicine	1 day weekly, 6 times	April through September	Lectures, Clinics, Demonstrations, Round Table Discussions, Clinical Pathologic Conferences, Consultation Service	Hospitals and other local facilities	Med. sch.	M.D.'s	$5	452 (5 circuits only)	Commonwealth Fund
Arizona Statewide	St. Med. Assn. and St. Bd. of Health	Director, Maternal and Child Health, St. Bd. of Health	Pediatrics, Obstetrics and Gynecology	1 day weekly, 3 times	Varies	Lectures and Round Table Discussions	Hospitals and public lecture rooms	Med. sch.	M.D.'s	No	170	Co. Med. Socs.
Arkansas 6 centers	St. Med. Soc. and St. Bd. of Health	Director, Div. of Mat. & Ch. Health, St. Bd. of Health	Pediatrics	1 day weekly, 6 times	May and June	Lectures, Round Table Discussions, Clin. Path. Confs.	Public buildings	Out of state	M.D.'s	No	240	.....
California 13 centers	St. Med. Assn.	Secretary, Comm. on P. G. Activities	General	1 to 3 days	Throughout year	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions	Hospitals	Med. sch. and in state	Co. or State Med. Soc. members	No	868	Co. Med. Socs.
Rural counties	Calif. T. B. Assn.	Chairman, Comm. on P. G. Educ.	Diseases of the Chest	1 day and evening	Throughout year	Clinics, Symposiums	Hospital	Med. sch. and in state	Co. and St. Med. Soc. members	No	...	St. Med. Assn.
Georgia 19 centers	St. Dept. of Public Health	Assistant Director	Venereal Diseases, Congenital Syphilis, Cancer Control, Tuberculosis, The Infant, Obstetrics, Laboratory Aids	2 days	Oct. and Nov., Jan. and Feb.	Lectures, Round Table Discussions	.....	In state	M.D.'s	No	517	Co. Med. Socs., Co. Bds. of Health, U. S. Public Health Service
Idaho 5 centers	St. Div. of Public Health and St. Med. Assn.	Director, St. Div. of Public Health	Pediatrics, Gynecology and Obstetrics, Dermatology and Syphilis	1 day	April	Lectures, Clinics, Demonstrations	Hospitals	Med. sch., out of state	M.D.'s	No	...	.....
Illinois 4 centers	St. Med. Soc.	Chairman, Scientific Service Comm.	General	1 day	Nov., Dec., Mar. and April	Lectures, Clinics, Round Table Discussions	Hospitals	Med. sch. and in state and out of state	Co. Med. Soc. members	No	712	.....
17 centers	St. Dept. of Health and St. Med. Soc.	Chairman, Scientific Service Comm., St. Med. Soc.	Obstetrics, Pediatrics	1 to 2 days monthly, 4 to 6 times	Throughout year	Lectures, Clinics, Symposiums, Demonstrations	Hospitals	Med. sch. and in state and out of state	M.D.'s	No	1,000	Federal funds
Indiana 9 centers	Indiana T. B. Assn.	Supt. of local sanatorium	Tuberculosis	1 day	Fall	Lectures, Clinics, Round Table Discussions	T. B. hospitals	In state	M.D.'s	No	109	St. Med. Assn.
12 regional centers	St. Bd. of Health	Chief, Bur. of Mat. and Ch. Health, St. Bd. of Health	Obstetrics, Pediatrics	1 day weekly, 4 to 6 times	Spring	Lectures, motion pictures	Hospitals	Med. sch.	M.D.'s	No	1,185	Indiana U. Sch. of Med. and St. Med. Assn.
Iowa 13 centers	St. Med. Soc.	Chairman, Speakers Bureau	General	Once weekly or monthly, 4 to 10 times	Spring and Fall	Lectures, Symposiums, Demonstrations	Hospitals and hotels	Med. sch., in state and out of state	Co. and St. Med. Soc. members	$5 to $7.50	657	St. U. of Iowa Coll. of Med., St. Bd. of Health
Kansas Statewide	St. Bd. of Health and St. Med. Soc.	Secretary, St. Bd. of Health and St. Med. Soc. committees	Obstetrics and Pediatrics, Cancer, Venereal Diseases, Tuberculosis	1 day weekly 4 times (Obs., Ped.), 2 days (V. D.), 1 day (Ca)	Varies	Lectures and Discussions	Hospitals and hotels	Med. sch. and in state and out of state	M.D.'s	No	612	U. S. Public Health Service, U. S. Child. Bureau, Kansas T. B. and Health Assn.

Louisiana											
13 centers	Louisiana St. U. Grad. Sch. of Med. and Gen. Ext. Div.	Dean, Grad. Sch. of Med.	General	1 to 4 evening programs	Throughout year	Lectures, Symposiums, Discussions	Public buildings	Med. sch.	Co. and St. Med. Soc. members	No	386	.....
8 centers	St. Bd. of Health and St. Med. Soc.	Director, Mat.-Child Health Div., St. Bd. of Health	Obstetrics	1 day weekly, 8 times	Varies	Lectures, Round Table Discussions, Clin. Path. Confs.	Public buildings	Med. sch. and in state	M.D.'s	No	220	.....
Massachusetts											
21 centers	St. Med. Soc. and Dept. of Public Health	Secretary, Exec. Comm. on P. G. Instr., St. Med. Soc.	General	1 day weekly, 8 to 10 times	Spring and Fall	Lectures, Clinics, Symposiums	Hospitals	In state and med. sch.	Registered physicians in Mass.	No	984	U. S. Public Health Service, U. S. Children's Bureau
Michigan											
8 centers	St. Med. Soc. and Univ. of Mich.	Chairman, Dept. of P. G. Med.	General	1 day weekly, 8 times	April and October	Lectures, Clinics, Symposiums	Hospitals	Med. sch.	M.D.'s	No	1,135	St. Dept. of Health, Rackham Fund, Kellogg Foundation, Wayne U. Coll. of Med.
4 centers	St. Dept. of Health, St. Med. Soc., Mich. Br. Amer. Acad. Ped.	Director, Bureau of Mat. and Ch. Health, St. Dept. of Health	Pediatrics	1 day weekly, 5 times	May	Lectures, Round Table Discussions	Hospitals and hotels	In state and med. sch.	M.D.'s	No	306	Federal funds
Minnesota											
8 centers	St. Dept. of Health, St. Med. Assn.	Exec. Officer and Asst. Dir. of V. D. Control, St. Dept. of Health	Diagnosis and Treatment of Syphilis and Gonorrhea	1 day weekly, 8 times	Oct. and Nov.	Lectures, Round Table Discussions	Public buildings	Med. sch.	Co. or St. Med. Soc. members	No	244	U. of Minn. Med. Sch., Federal funds
2 centers	U. Minn. General Extension Division	Director, Extension Division	General	1 day weekly, 8 times	Varies	Lectures	Public buildings	In state med. sch.	Co. Med. Soc. members	..	12-18 (average at each session)	.....
15 centers	Minn. Public Health Assn.	Executive Secretary	New Advances in Tuberculosis	1 day	Varies	Lectures, Clinics, Demonstrations, Round Table Discussions	Hospitals	Med. sch.	M.D.'s	No	30-50 (average at each session)	Local Co. Med. Socs.
Mississippi											
Statewide (19 centers)	St. Med. Assn., St. Bd. of Health, Tulane U. of La. Sch. of Med.	Director, Dept. of Grad. Med. Studies, Tulane U.	Gynecology, Surgery, Syphilology	2-3 days	Throughout year	Lectures, Clinics, Demonstrations, Round Table Discussions, Consultations	Hospitals	Med. sch.	M.D.'s	$5	219	Commonwealth Fund
Missouri											
24 county and district socs.	St. Med. Assn.	Chairman, Comm. on P. G. Course	General	Day or evening	Throughout year	Lectures, Discussions	Hospitals or halls	Med. sch. and in state	St. Med. Assn. members	No	...	.....
3 centers	Mo. T. B. Assn.	President	Diagnosis of Tuberculosis	1 evening	Varies	Lectures, Clinics, Symposiums, Demonstations, Round Table Discussions	T. B. hospitals	In state	M.D.'s	No	114	.....
Montana											
8 centers	St. Med. Assn. and St. Bd. of Health	Chairmen, P. G. Educ. and Mat. and Ch. Health Comms.	Pediatrics and Obstetrics	1½ days	May and June	Lectures, Round Table Discussions	Lecture rooms	Med. sch.	M.D.'s	No	174	.....
Nebraska											
15 centers	St. Med. Assn. and St. Dept. Health	Director, Div. of Mat. and Ch. Health, St. Dept. of Health	Obstetrics and Pediatrics	1 day and 1 day weekly, 2 to 4 times	Nov. and April	Lectures, Clinics, Symposiums	Hospitals	Med. sch.	M.D.'s	No	355	Federal funds
New Jersey											
6 centers	St. Med. Soc.	Chairman, Comm. on P. G. Education	Medicine, Surgery, and Specialties	1 day weekly, 6 times	Winter and Spring	Lectures	Hospitals and Co. Med. Soc. rooms	Med. sch.	Co. or St. Med. Soc. members	$5 to $10	393	Rutgers University, Extension Division
New York											
29 centers	St. Med. Soc. and St. Dept. of Health	Chairman, Counc. Comm. on Public Health and Educ., St. Med. Soc.	General	Once weekly, 1 to 7 times	Throughout year	Lectures, Demonstrations	Hospitals	Med. sch.	Co. or St. Med. Soc. members	No	658	.....

TABLE 1.—CONTINUATION COURSES FOR PRACTICING PHYSICIANS, 1939-1940—CONTINUED

A. In Proximity to Their Homes—Continued

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Persons Eligible for Admission	Registration Fee	Approximate No. M.D.'s Attending	Additional Contributing Agencies and Funds
North Carolina												
3 centers	U. of North Carolina Extension Div. and Med. Sch.	Assistant Director, Extension Div.	General Medicine, Surgery	1 day weekly, 6 times	Spring	Lectures, Clinics	Hospitals and hotels	Out of state and med. sch.	M.D.'s	$15	325	.....
Ohio												
5 centers	St. Med. Assn.	Chairman, Comm. on Education	General	6 sessions, biweekly	Fall	Lectures	Public buildings	In state and med. sch.	Co. or St. Med. Soc. members	No	952	None
Oklahoma												
45 centers (9 circuits)	St. Med. Assn.	Field Dir., Comm. on P. G. Study	Pediatrics	1 day weekly, 10 times	Throughout year	Lectures, Clinics, Demonstrations, Round Table Discussions	Hospitals, public lecture halls	Out of state	M.D.'s	$6	285 (all circuits not completed)	St. Health Dept., Commonwealth Fund
44 centers	St. Med. Assn. and St. Dept. of Health	Chairman, Cancer Comm., St. Med. Assn.	Diagnosis and Treatment of Cancer	1 session	Feb. and March	Lectures, Clinics	Hospitals, outpatient departments	Out of state	Co. or St. Med. Soc. members	No	1,172	Amer. Soc. for the Control of Cancer
Pennsylvania												
Statewide	St. Med. Soc.	Chairman, Comm. on Grad. Educ.	General	1 day weekly, 6 times	Varies	Lectures, Demonstrations, Round Table Discussions	Hospitals, medical schools, state health dept.	Med. sch.	Co. or St. Med. Soc. members	$5-$10	2,867	.....
Tennessee												
45 centers (9 circuits)	St. Med. Assn.	Chairman, Comm. on P. G. Instr. in Ped.	Pediatrics	1 day weekly, 10 times	Throughout year	Lectures, Clinics, Demonstrations, Consultation Service	Hospitals, public buildings	Out of state	M.D.'s	$2.50 to $10	772 (7 circuits)	St. Health Dept., U. of Tenn. and Vanderbilt U. Med. Schs., Commonwealth Fund
Texas												
Statewide	St. Med. Assn. and St. Dept. Health	Director, Mat. and Child Health, St. Dept. of Health	Obstetrics and Pediatrics	1 day	Fall, Winter and Spring	Lectures and Demonstrations	Hospitals and public buildings	In state	M.D.'s	No	450	Federal funds
Vermont												
20 centers	St. Dept. Public Health.	Director, Div. of T. B.	Pulmonary Tuberculosis	1 session	Varies	Clinics	Hospitals	Med. sch.	M.D.'s	No	80	None
Virginia												
Statewide (85 centers)	St. Med. Soc. and St. Dept. of Health	St. Health Commissioner	Obstetrics	4 times yearly	Varies	Clinics, Demonstrations, Round Table Discussions	Hospitals, clinics and health centers	Med. sch.	M.D.'s	No	260	U. S. Children's Bureau
4 centers	St. Med. Soc.	Exec. Sec'y, Dept. of Clin. and Med. Educ.	Internal Medicine, Surgery, Obstetrics, Gynecology, Pediatrics	1 day weekly, 6 times	Feb., Mar. and April	Lectures, Clinics, Round Table Discussions	Hospitals	Med. sch. and out of state	Co. or St. Med. Soc. members	$5	185	U. of Va. Ext. Div.
Washington												
12 centers	St. Med. Soc. and St. Dept. of Health	Director, Mat. and Ch. Hygiene Div., St. Dept. of Health	Obstetrics	3 days	Summer	Lectures	Public lecture rooms	Med. sch.	M.D.'s and others on invitation	No	200	None
West Virginia												
10 centers	St. Med. Assn. and St. Health Dept.	Exec. Sec'y, St. Med. Assn.	Pediatrics, Obstetrics, Venereal Disease	1 day weekly, 5 times	July and August	Lectures, Demonstrations	Public buildings	Med. sch.	M.D.'s	No	350	U. S. Children's Bureau
Wisconsin												
3 centers	St. Med. Soc.	Chairman, Comm. on P. G. Work	Medicine, Surgery, Pediatrics and Obstetrics	1 day	April	Lectures, Clinics, Round Table Discussions	Public halls	Med. sch.	Co. or St. Med. Soc. members	$5	450	St. Dept. of Health

(Continued from page 709)

clinical demonstrations were attempted. Laboratory as well as clinical facilities were utilized. In addition to medical schools which opened their facilities to practicing physicians for short periods of clinical study, use was made of hospitals, medical society buildings, outpatient clinics, health agencies and, in two instances, hotels.

REGISTRATION

All continuation courses were open to licensed physicians practicing in or near the community in which the instruction was given. In some only practicing physicians were admitted to the course and, in fifteen of the forty-one itinerant opportunities, membership in county or state medical societies was required. Registration varied from fifteen at each session in one instance to a total of 2,867 in one state. The median number of practicing physicians who enrolled for these courses of continuation study was 390.

Eligibility for admission to courses featuring clinical instruction included a doctor of medicine degree in every instance and additional qualifications in some. The yearly attendance varied appreciably; 500 or more physicians were accommodated in seven centers, from 200 to 500 in eight, from 100 to 200 in eight others, while less than 100 were in attendance in the remaining courses listed. Where large numbers of physicians were accommodated, either many varied courses with limited attendance were scheduled, like those offered at Columbia University in New York City, or the instruction simulated that given in clinical conferences, such as the annual program of the Philadelphia County Medical Society.

FINANCIAL SUPPORT

For thirty of the forty-one itinerant continuation courses no registration fees were charged; in ten, fees varied from $2.50 to $15. Thirty-one state medical societies contributed materially and financially. State boards of health aided in the support of twenty-seven courses; federal agencies contributed to the support of ten and universities, including medical and graduate schools and extension divisions, twelve. The Commonwealth Fund has given financial aid for promoting graduate study in four states, and tuberculosis associations of four states gave financial support.

With nineteen exceptions, continuation courses featuring clinical material at one center required fees of from $5 to $1,000. Medical schools most frequently were the contributing agencies, with medical societies, state departments of health and private foundations and funds sharing part of the expenses of clinical instruction. Sixteen courses received financial support from federal agencies. In all but two cases this aid was supplied by state boards of health to medical schools. Through the financial assistance of the Bingham Associates Fund, physicians of Maine traveled to Boston for continuation study. Similarly, through the aid of the state health department, physicians from Utah enrolled in courses offered by the University of California. Federal funds supplied to health departments in Minnesota, North Dakota and South Dakota were used to pay the expenses of physicians taking courses at the Center for Continuation Study connected with the University of Minnesota.

CLINICAL CONFERENCES, GRADUATE ASSEMBLIES AND STUDY COURSES

Information was received regarding fifty-seven clinical conferences, graduate assemblies and study courses. These data are summarized in table 2, page 721. Such opportunities were provided for practicing physicians in thirty-two states and the District of Columbia by state and county medical societies, clinical societies, medical schools and health departments. Forty-four of the programs were sponsored by medical and clinical societies, some in cooperation with other organizations and ten by medical schools, either independently or jointly with medical societies, departments of health or hospitals.

Clinical conferences, with a few exceptions, were of from one to four days' duration and usually held in the spring or fall in metropolitan areas with facilities to accommodate large assemblies. Lectures were given in all but two programs. In more than half of these conferences, clinics as well as round table discussions and demonstrations were conducted.

About one half of the conferences were concerned with general discussions in medicine and surgery and the remainder with such subjects as obstetrics, pediatrics, heart disease, endocrinology, tuberculosis, venereal disease and pneumonia. In forty-one of the fifty-seven programs given, the facilities of hospitals and medical schools were used. Medical school instructors were engaged for forty-four of the programs. Physicians not in teaching positions but from within the state in which the clinical conference was held participated in thirty-one programs, and out of state speakers were engaged in thirty-six.

Practicing physicians were eligible for admission to all conferences and in eleven membership in county, state or special medical societies was required. In all but twenty-six programs, registration fees varied from $1 to $30. The approximate yearly attendance at clinical conferences ranged from seven to 1,015, the median being 117.

Forty-four programs were supported either in whole or in part by medical, clinical or special societies. Twenty-three were independent efforts on the part of these societies. City and state departments of health contributed to the support of fourteen courses. Two of these were sponsored and financed by health departments alone. Medical schools, universities or colleges aided in the support of eighteen conferences and assemblies. There were three independent efforts by one or more of the agencies just named. Federal and state agencies, hospitals and private funds aided financially eighteen programs.

SUMMARY

1. Forty-one states and the District of Columbia provided a form of continuation study for physicians and, when clinical conferences were included, forty-four states and the District of Columbia offered graduate opportunities. Delaware, Nevada and New Mexico reported no programs.

2. Forty-one itinerant courses of continuation study for practicing physicians were offered in or near the home communities of physicians in thirty-one states. State medical societies sponsored the majority, with state boards of health as well as extension divisions of universities and medical schools as joint sponsors in many states. Medical schools sponsored most of the eighty-eight opportunities where clinical instruction might be featured at one center over five or more days in thirty-one states and the District of Columbia. Five states including Utah provided for such study outside the state.

3. According to reports received, the approximate attendance at courses of an itinerant nature, clinical

(Continued on page 720)

TABLE 1.—CONTINUATION COURSES FOR PRACTICING PHYSICIANS, 1939-1940

B. Where There Are Ample Facilities for Clinical Instruction—Five or More Days

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Eligible for Admission	Registration Fee and/or Tuition	Approximate No. of M.D.'s Attending	Additional Contributing Agencies and Funds
Alabama												
Birmingham	Jefferson Co. Bd. of Health, Alabama T. B. Assn.	Co. Health Officer and Exec. Sec'y, T. B. Assn.	Tuberculosis, Venereal Diseases, Pediatrics, Obstetrics	5 days	Varies	Lectures, Clinics, Demonstrations, Pneumothorax Technic, X-Ray Conferences	Maternity Clinic Bldg. Slossfield Health Center	In state	Negro M.D.'s	No	11	Birmingham Health Assn., U. S. Children's Bureau
Tuskegee Institute	John A. Andrew Clin. Soc.	Chairman, Program Comm.	General	1 week	April	Lectures, Clinics, Round Table Discussions	Hospital, outpatient clinics	Med. sch., in state and out of state	Negro M.D.'s	$5	204	John A. Andrew Mem'l Hosp.
California												
Pasadena	Huntington Mem'l Hosp.	Chairman, P. G. Comm.	General Medicine and Surgery	1 week	October	Lectures, Clinics, Clin. Path. Confs.	Hospital	Med. sch.	M.D.'s	$10	70	S. P. Black Mem'l Lecture Assn.
San Francisco	Stanford U. Sch. of Med.	Dean	General Review Courses	1 week	September	Lectures, Demonstrations, Ward Rounds, Clinics, Laboratory Experience	Hospital	Med. sch.	M.D.'s	$25-$35	150	San Francisco Dept. of Public Health, San Francisco Hosp.
	St. Dept. of Public Health, U. of Calif. Med. Sch.	Chief, Bur. Child Hyg., St. Dept. of Public Health	Obstetrics, Pediatrics	1-2 weeks	Summer	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions	Hospital, outpatient department	Med. sch.	M.D.'s	No	29	St. Med. Assn., Social Security Bd.
District of Columbia												
Washington	Catholic U. of America [1]	Head, Dept. of Psychol. & Psychiatry	Adult and Child Psychiatry, Mental Hygiene	1-2 semesters	Throughout year	Lectures, Clinics, Demonstrations	Child Center at Univ.	Univ. Dept. of Psych. and Psychol.	M.D.'s	$10 (per sem. hr. for part time) $375 (full time)	1	Rockefeller Foundation
	George Washington U. Sch. of Med.	Dean	Ophthalmology	3 courses, 1 week each	March and April	Lectures, Discussions	Medical School, hospital, hotel	Med. sch., out of state, med. officers of Army, Navy & Civil Aeronautics Authority	M.D.'s	$40-$100	165	.....
	Howard U. Sch. of Med.	Dean	Venereal Disease Control	3 months	Fall, Winter and Spring	Lectures, Clinics, Round Table Discussions, Clin. Path. Confs., Ward Rounds	Medical School, hospital	Med. sch.	M.D.'s (having 1 yr. internship in appr. hosp.) [2]	$20	13	.....
Florida												
Jacksonville	Sc. Med. Assn., St. Bd. of Health	Chairman, Med. P. G. Course Comm. (joint committee)	General and Special	1 week	June	Lectures, Clinics, Symposiums, Round Table Discussions	Hospital	Med. sch.	Members of, and those certified by Co. Med. Socs.	$5	127	Florida T. B. & Health Assn.
Georgia												
Augusta	U. of Georgia Sch. of Med.	Dean	General Medicine and Surgery, Specialties	2 weeks	June	Lectures, Clinics, Demonstrations, Ward Rounds, Assignment of Patients, etc.	Hospital, outpatient department	Med. sch. and in state	Negro M.D.'s	No	21	.....
Idaho												
Boise	St. Med. Assn.	Secretary	General Medicine and Surgery	5 days	August	Lectures, Clinics, Round Table Discussions	Hospital	Med. sch. and in state	M.D.'s	$10	275	None
Illinois												
Chicago	Children's Mem'l Hosp.	Chief of Staff	Pediatrics and Specialties	1 month	September	Lectures, Clinics, Demonstrations, Clin. Path. Confs.	Hospital	Med. sch.	M.D.'s	$100	13	None
	Michael Reese Hosp.	Secretary, Grad. Teaching Comm.	Rorschach Method of Psychological Interpretation, Electrocardiography	5 days and 2 weeks	July and August	Lectures, Clinics, Demonstrations, Round Table Discussions	Hospital, outpatient department	Staff members with teaching positions	M.D.'s, psychologists with clinical experience	$35 and $100	27	None
	Northwestern U. Med. Sch.	Dean	Physical Therapy, Medicine, G. U. Surgery, Ophthalmology	4 weeks	September	Lectures, Demonstrations, Clinics, Ward Rounds	Medical School, hospital	Med. sch.	M.D.'s	$50-$300	38	.....

	St. Dept. of Public Health, U. of Illinois Coll. Med., U. of Chicago Sch. Med.	Advisory Comm. of Obstetrics and Pediatrics	Obstetrics, Pediatrics	1, 2 and 6 weeks	Throughout year	Lectures, Clinics, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Medical Schools, hospitals, outpatient departments	Med. sch.	M.D.'s	$10-$25	60	St. Med. Soc., Ill. Acad. of Ped., Federal funds
	U. of Chicago Sch. of Med.	Dean	Medicine, Gastroscopy	2 weeks, 3 months	Varies	Didactic and Clinical	Medical School, hospital, outpatient department	Med. sch.	M.D.'s	$100-$150	22	.....
	U. of Illinois Coll. of Med.	Dean	Anatomy, Otolaryngology, Ophthalmology	1 week to 8 months	Throughout year	Lectures and Clinics	Medical College, hospital, outpatient department	Med. sch.	M.D.'s	$10-$100	33	.....
Indiana												
Indianapolis	Indiana U. Sch. of Med.	Chairman, Dept. of E. N. T.	Ear, Nose and Throat	2 weeks	April	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs., Lab. Procedures	Medical School, hospitals, outpatient departments	Med. sch.	M.D.'s (giving special attention to E. N. T.)	$150	25	None
		Chairman, Dept. of P. G. Educ.	Cardiology	1 week	June	Lectures, Clinics, Demonstrations, Round Table Discussions	Medical School, hospitals, outpatient departments	Med. sch., out of state	M.D.'s	$35	20 (limited)	Federal funds
			General Medicine and Surgery	1 week	May	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Medical School, hospitals, outpatient departments	Med. sch., in state and out of state	M.D.'s	No	475	Federal funds
	St. Bd. of Health, Indiana U. Sch. of Med., St. Med. Assn.	Chief, Bureau Mat. and Child Health, St. Bd. of Health	Obstetrics	2 weeks	Throughout year	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs., Movies	Medical School, hospitals, outpatient departments	Med. sch., in state and out of state	M.D.'s	No	15	Federal funds
Iowa												
Iowa City	American Coll. of Physicians	Director, P. G. Course No. 5	Cardiovascular Diseases	1 week	March	Lectures, Clinics, Ward Rounds, Round Table Discussion, Clin. Path. Conf.	University hospitals	Med. sch.	M.D.'s [3]	$20	27	St. Univ. of Iowa Coll. of Med.
Kansas												
Emporia	St. Med. Soc.	Chairman, Comm. on Study of Heart Disease	Heart Disease	5 days	October	Lectures, Clinics	Hospitals	Med. sch.	M.D.'s (having training in this subject)	$25	35	.....
Kentucky												
Lexington	U. of Kentucky	Head, Dept. of Hyg. and Public Health	Public Health and Allied Subjects	12 weeks	Summer	Lectures, Round Table Discussions, Field Work	Co. Health Depts.	Med. sch., in state and out of state	M.D.'s	$100	30	St. Dept. of Health
Louisiana												
New Orleans	Flint-Goodridge Hosp. of Dillard U.	Superintendent	General	2 weeks	June	Lectures, Clinics, Symposiums	Hospital	Med. sch.	Negro M.D.'s	$5	37	National T. B. Assn. and Private
	Louisiana St. U. Grad. Sch. of Med.	Dean	Anatomy, Radiology, Public Health, Urology	2 weeks to 3 months	Throughout year	Didactic and Clinical	Medical School hospital, outpatient department	Med. sch.	M.D.'s	$25-$150	29	None
	St. Bd. of Health, La. St. U. Med. Center, Tulane U. of La. Sch. of Med.	Director, Div. of Mat. and Ch. Health, St. Bd. of Health	Obstetrics, Pediatrics	2 weeks	Throughout year	Lectures, Clinics, Demonstrations, Ward Rounds	Medical Schools, hospitals, outpatient departments	Med. sch.	M.D.'s	Fees paid by St. Bd. of Health	10 (limit at each course)	U. S. Children's Bureau
	St. Bd. of Health, La. St. U. Med. Center	Professor of Prev. Med., La. St. U.	Syphilology and Allied Subjects	4 and 6 weeks	Throughout year	Lectures, Clinics, Demonstrations, Clin. Path. Confs., Seminars, Field Visits	Medical Center, hospitals, outpatient departments	Med. sch., in state and out of state	M.D.'s	No	23	U. S. Public Health Service
	Tulane U. of La. Sch. of Med., Dept. of Grad. Studies	Director	General (intensive instruction)	1 week	October	Lectures, Clinics, Symposiums, Clin. Path. Confs.	Medical School, hospital	Med. sch.	M.D.'s	$5	51	.....
			Radiology, Anesthesia, Medicine, Surgery, Obstetrics-Gynecology	4 weeks	Throughout year	Didactic and Clinical	Medical School, hospital, outpatient department	Med. sch.	Licensed physicians	$100-$300	121	.....

TABLE 1.—CONTINUATION COURSES FOR PRACTICING PHYSICIANS, 1939-1940—Continued

B. Where There Are Ample Facilities for Clinical Instruction—Five or More Days

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Eligible for Admission	Registration Fee and/or Tuition	Approximate No. of M.D.'s Attending	Additional Contributing Agencies and Funds
Maine												
Boston, Mass.	Bingham Associates Fund	Director	General and Special	2 weeks to 1 month	Throughout year	Lectures, Clinics, Symposiums, Clin. Path. Confs.	New Eng. Med. Center, hospitals, medical school	Med. sch.	Co. and St. Med. Soc. members	Fees paid by Bingham Assoc.	48	Tufts Coll. Med. Sch.
	Commonwealth Fund	Director, Extension Service	Medicine, Obstetrics, Pediatrics, Office Surgery	1 month	Varies	Lectures, Clinics, Bedside Teaching	Medical School, hospital	Med. sch.	M.D.'s (subject to approval)	Fees paid by Commonwealth Fund	10	Harvard Med. Sch.
Maryland												
Baltimore	Johns Hopkins U. Sch. of Med.	Dean	General and Special	6 months to 1 year	Per arrangement	Clinical, Laboratory	Medical School, outpatient department	Med. sch.	M.D.'s (acceptable to dept. heads)	$150-$300	13	None
Massachusetts												
Boston	Harvard Medical Sch., Courses for Graduates	Assistant Dean	Preclinical, General and Special	Varies	Throughout year	Didactic and Clinical	Medical School, hospital, outpatient department	Med. sch.	M.D.'s	$15-$600	600	.....
	Tufts Coll. Med. Sch.	Chairman, P. G. Division	General and Special	1 to 4 weeks	Throughout year	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Hospitals, outpatient departments, laboratories	Med. sch.	M.D.'s	$5	103	Bingham Associates Fund
Cambridge	Mass. Institute of Technology	Dean of Science	Public Health and Allied Subjects	7½ weeks	Summer	Lectures, Demonstrations, Round Table Discussions, Field Trips	Health department	Staff members	M.D.'s, engineers bacteriologists, health educators	$125	6	None
Michigan												
Ann Arbor	American Coll. of Physicians	Director, P. G. Course No. 1	General Medicine	2 weeks	March	Clinics, Demonstrations, Conferences	Medical School, hospital	Med. sch.	M.D.'s[2]	$40	33	Univ. of Mich. Med. Sch.
	U. of Mich. Med. Sch., St. Med. Soc.	Chairman, Dept. P. G. Med.	Preclinical, General and Special	1 to 8 weeks or longer	Throughout year	Lectures, Clinics, Symposiums, Demonstrations, Clin. Path. Confs.	Medical School, hospital	Med. sch., in state and out of state	M.D.'s	$5-$25	902	St. Dept. of Health, Wayne U. Coll. of Med., Rackham Fund, Kellogg Foundation
Detroit	American Coll. of Physicians	Director, P. G. Course No. 2	Medicine in Industry	1 week	March	Lectures, Symposiums, Field Trips, Clin. Path. Confs.	Educational Bldg.	Med. sch. in state and out of state	M.D.'s [2]	$20	38	Henry Ford Hosp.
	Wayne Co. Med. Soc., Wayne U. Coll. of Med.	Chairman, Advisory Council	General Medicine, Specialties, Clinical Laboratory Procedures	1 day weekly, 16 times	Fall and Winter	Lectures, Clinics, Demonstrations, Bedside Teaching	Hospitals, outpatient departments, Dept. of Health Social Hygiene Clinic	Med. sch. and in state	Co. and St. Med. Soc. members	No	240	.....
	Wayne U. Coll. of Med.	Dean	Anatomy, Pathology	1 day weekly, 1 semester	Fall	Lectures, Laboratory	Medical College	Med. coll.	M.D.'s	$25	90	.....
Minnesota												
Minneapolis	U. of Minn. Center for Continuation Study	Director, Dept. P. G. Med. Educ.	General	6 days	Throughout year	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs., Field Trips, Movies	Medical Center and affiliated hospitals	Med. sch., in state and out of state	Licensed Minn. M.D.'s; out of state Co. Med. Soc. members	$25	318	St. Dept. of Health, St. Med. Assn., Commonwealth Fund, Minn. Hosp. Assn., Federal funds
Mississippi												
Sanatorium	Miss. St. T. B. Sanatorium	Superintendent	Diseases of Chest Internal Medicine, Chest Surgery	30 to 90 days	Summer	Clinics, Demonstrations, Round Table Discussions, Clin. Path. Confs., Bedside Teaching, X-Ray Confs.	Hospital, outpatient department	Resident hospital staff	M.D.'s	No	...	.....
Missouri												
St. Louis	St. Louis U. Sch. of Med.	Dean	Medicine, Surgery, Obstetrics, Pediatrics	1 month	Summer or Fall	Lectures, Clinics, Symposiums	Hospital, outpatient department	Med. sch.	Negro M.D.'s (Med. Soc. members)	$20	25	.....

	Washington U. Sch. of Med.	Dean	Obstetrics, Gynecology, Otolaryngology, Ophthalmology	1 month, 8 months	Varies	Clinical	Medical School, hospital	Med. sch.	M.D.'s	$100-$800	42	None
New Hampshire												
Boston, Mass.	Commonwealth Fund	Director, Extension Division	Internal Medicine, Obstetrics, Pediatrics, Minor Surgery	1 month	Spring	Lectures, Clinics, Symposiums, Round Table Discussions, Clin. Path. Confs.	Medical School, hospital, outpatient department	Med. sch.	M.D.'s (subject to approval)	No	15	Harvard Med. Sch., St. Med. Soc., St. Div. of Public Health
New Jersey												
Jersey City	St. Med. Soc., Margaret Hague Maternity Hosp.	Medical Director of Hospital	Obstetrics	Varies	Per arrangement	Clinical	Hospital	Hospital staff	St. Med. Soc. members	No	6	.....
New York												
Brooklyn	Kings Co. Med. Soc., Long Island Coll. of Med.	Chairman, Joint Comm. on P. G. Educ.	General	1 to 3 times weekly, 1 to 3 months	Fall, Winter and Spring	Lectures, Clinics, Demonstrations, Conferences	Medical School, hospitals, outpatient departments, Co. Soc. Bldg.	Med. sch., in state	M.D.'s	$10-$25 up	454	None
Buffalo	U. of Buffalo Sch. of Med.	Dean	General	2 weeks	September	Lectures, Clinics, Round Table Discussions, Bedside Instruction	Medical School, hospitals, outpatient department	Med. sch.	M.D.'s	$50	63	None
New York City	American Coll. of Physicians	Director, P. G. Course No. 3	Allergy	2 weeks	March	Clinical and Laboratory Work, Conferences, Demonstrations	Hospital	Med. sch., hosp. staff	M.D.'s [2]	$40	8 (limited)	Roosevelt Hospital
	City of New York Dept. of Health	Director, Bureau of Social Hygiene	Venereal Diseases	2 months (full time)	Varies	Practical and Didactic Instruction	City Health Dept., outpatient departments	Staff members, outside authorities	Licensed physicians, medical students	No	125	.....
			Venereal Diseases	6 weeks (part time)	Summer	Practical Clinical Instruction	Central Clinic City Health Dept. Bldg.	Staff members, invited guests	Licensed physicians, medical students	No	12	None
	Columbia U. Coll. of Phys. & Surgs. and New York P. G. Med. Sch.	Dean	Preclinical, General and Special	1 week to 3 months	Throughout year	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs.	P. G. Med. Sch. and hospitals affiliated with Univ.	Med. sch., in state	M.D.'s	$15-$250	1,061	Columbia Univ.
	New York Academy of Med.	Chairman, Comm. on Graduate Fortnight	Endocrine Glands and Their Disorders	2 weeks	October	Lectures, Clinics, Demonstrations, Round Table Discussions, Symposiums	Hospitals, Academy Bldg.	Med. sch., in state, out of state	M.D.'s	$5	800	.....
	New York Eye & Ear Infirmary Sch. of Oph. & Otol.	Chairman	Ophthalmology, Otology, Rhinology, Laryngology, Bronchoscopy, Esophagoscopy	1 week	March	Lectures, Clinics, Demonstrations	Hospital	Med. sch.	M.D.'s	$50	25	None
			General and Special Branches of Ophthalmology and Otolaryngology	1 to 3 months	Throughout year	Lectures, Clinics, Demonstrations, Clin. Path. Confs., Laboratory	Hospital, Laboratory	Med. sch.	M.D.'s	$40-$100	302	None
	New York Med. Coll.	Dean	Anatomy, Electrocardiography	Varies	Throughout year	Lectures, Demonstrations, Conferences	Medical College	Med. coll.	M.D.'s	$50-$150	7 (limited)	None
	New York Polyclinic Med. Sch. & Hosp.	Medical Executive Officer	Preclinical, General and Special	1 week to 9 months	Throughout year	Didactic, Clinical and Laboratory	Medical School, hospital, outpatient department	Med. sch.	M.D.'s	$20-$1,000	159	None
	New York Univ. Coll. of Med.	Assistant Dean	Radiology, Anesthesia, Pediatrics, Forensic Medicine, Allergy, Dis. of Chest (Surg.)	3 weeks to 8 months	Throughout year	Lectures, Clinics, Discussions, Demonstrations, Conferences, Movies	Medical College, hospital, outpatient department	Med. coll.	M.D.'s	$25-$200	89	None
			Syphilology	4 weeks, 8 weeks, 8 months	January, Fall and Winter, Sept. through May	Didactic, Clinical, Laboratory	Medical College, N. Y. C. Dept. of Health, hospitals, clinics	Med. coll.	M.D.'s	No	32 (8 wks. course)	U. S. Public Health Service, St. Dept. of Health
	St. Dept. of Health	Director, Division of Child Hygiene	Obstetrics	3 months	Varies	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Margaret Hague Hosp., Jersey City, N. J.	Hospital staff	M.D.'s (from rural areas)	$25 (paid by St. Dept. of Health)	4	Social Security Board

TABLE 1.—CONTINUATION COURSES FOR PRACTICING PHYSICIANS, 1939-1940—Continued

B. Where There Are Ample Facilities for Clinical Instruction—Five or More Days

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Eligible for Admission	Registration Fee and/or Tuition	Approximate No. of M.D.'s Attending	Additional Contributing Agencies and Funds
New York—Continued												
Rochester	U. of Rochester Sch. of Med.	Director, Summer Course in Ophthalmology	Ophthalmology	5 days	July	Lectures, Demonstrations, Clinics	Medical School, hospital	Med. sch., in state, out of state	Ophthalmic practitioners	$40	...	None
Saranac Lake-Trudeau	Trudeau Sch. of T. B.	Director	Tuberculosis	6 weeks	September, October	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs., Quizzes	Hospitals, laboratories	Med. sch., in state	M.D.'s, 3d year med. students	$100	30	Edw. L. Trudeau Foundation, Bellevue Hosp., N. Y. C., Lillia Babbitt Hyde Foundation
North Carolina												
Chapel Hill	U. of North Carolina Grad. Sch.	Dean	Public Health	3-4 months	Fall	Lectures, Field Demonstrations, Laboratory Courses, Practical Field Work	Graduate School, local health units or interstate sanitary district	Grad. Sch. Div. of Public Health, in state	Public health workers	No	14	U. S. Public Health Service
Saluda	Southern Pediatric Seminar	Registrar	Pediatrics, Obstetrics	2 weeks	July	Lectures, Symposiums, Round Table Discussions, Clin. Path. Confs., Clinics	Hospitals	Med. sch., in state, out of state	M.D.'s	$25	84	.....
North Dakota												
Minneapolis, Minn.	U. of Minnesota Center for Continuation Study, N. D. St. Dept. of Health	Director, P. G. Med. Educ. Center for Cont. Study, St. Health Officer	Obstetrics, Pediatrics, Venereal Diseases	1 week	Varies	Lectures, Demonstrations, Round Table Discussions	Center for Continuation Study, hospitals	Med. sch., in state, out of state	M.D.'s	No	72	Local medical societies, Federal funds
Ohio												
Cincinnati	U. Cincinnati Coll. of Med.	Dean	Otolaryngology	1 week	May	Anatomical Studies	Medical College, hospital	Med. coll.	Practicing otolaryngologists	$60	24	None
Cleveland	American Coll. of Physicians	Executive Secretary	Internal Medicine and Allied Specialties	5 days	April	Lectures, Discussions, Clinics, Demonstrations	Hospitals, outpatient departments, Public Auditorium	Med. sch., in state, out of state	Qualified physicians, medical students	None, $12	1,931	.....
Columbus	American Coll. of Physicians	Director, P. G. Course No. 4	Survery of Hematologic Diseases	1 week	March	Lectures, Clinics, Informal and Clin. Path. Confs., Demonstrations, Round Table and General Discussions, Personal Patient Studies	St. Univ., hospital, laboratories	Med. coll., in state, out of state	M.D.'s [3]	$20	38	Ohio St. U. Coll. of Med.
Oklahoma												
Oklahoma City	St. Health Dept., U. of Oklahoma Sch. of Med.	Assoc. Prof. of Obs., Sch. of Med.	Obstetrics, Gynecology, Anatomy, Pediatrics, Urology	2 weeks	Varies	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs., Home Deliveries	Medical School, hospital, outpatient department	Med. sch.	M.D.'s	$25	4 (limited)	U. S. Children's Bureau
Oregon												
Portland	Oregon Academy of Oph. and Otol.	Chairman, Comm. on Arrangements	Ophthalmology, Otolaryngology	1 week	April	Lectures, Clinics, Demonstrations, Round Table Discussions, Clin. Path. Confs., Movies	Medical School, hospitals, outpatient departments	Med. sch., in state, out of state	M.D.'s	$25	80	Univ. of Oregon Med. Sch.
Pennsylvania												
Philadelphia	American Coll. of Surgeons Clinical Congress	Chairman, Administrative Board	Surgery and Surgical Specialties	5 days	October	Conferences, Clinics, Films, Clin. Demonstrations, Panel Discussions, Symposiums	Hospitals	Med. sch., in state, out of state	Fellows A. C. S. and invited guests	$5-$10	2,000	5 medical schools and 40 hospitals in Philadelphia
	Pennsylvania Hospital	Chief, Medical Service	Internal Medicine, Cardiology, Metabolism	1 to 3 weeks	June	Lectures, Clinics, Symposiums, Round Table Discussions, Demonstrations, Clin. Path. Confs., Ward Rounds	Hospital, outpatient department, food clinic	Med. sch., in state	M.D.'s	$35-$100	24	None

	Philadelphia Co. Med. Soc.	Director, P. G. Institute	Cardiology, Vascular and Nephritic Diseases	5 days	March	Lectures	Hotel	Med. sch., in state	Co. or St. Med. Soc. members, senior medical students	$5 (no charge to Phila. Co. Med. Soc. members)	1,981	None
	St. Dept. of Health	Director, Institute for Syphilis Control	Syphilis and Gonorrhea	1 to 3 weeks	.....	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions	Hospital, outpatient department	Med. sch.	Co. or St. Med. Soc. members, publ. health physicians	No	50	None
	Temple U. Sch. of Med.	Dean	Broncho-esophagology	2 weeks	Throughout year	Clinical	Hospital, outpatient department	Med. sch.	M.D.'s	$250	80	None
	U. of Pennsylvania Grad. Sch. of Med.	Dean	General and Special	2 to 32 weeks	Throughout year	Clinical	Medical School, hospitals, outpatient department	Grad. med. sch.	M.D.'s	$25-$800	36	None
South Carolina												
Charleston	Med. Coll. of the St. of South Carolina	Dean	Obstetrics, Pediatrics	2 weeks	Varies	Didactic and Clinical	Medical College, hospital, outpatient department	Med. sch.	M.D.'s	$50	16	St. Board of Health
South Dakota												
Minneapolis, Minn.	U. of Minnesota Center for Continuation Study, S. D. St. Bd. of Health	Director, P. G. Med. Educ. Center for Cont. Study, Director, Div. Mat. & Ch. Health, St. Bd. of Health	Obstetrics, Pediatrics	10 days	Varies	Lectures, Demonstrations, Clinics, Discussions	Center for Continuation Study, U. Med. Sch. and hospitals	Med. sch.	M.D.'s	Fees paid by St. Bd. of Health	20	U. S. Children's Bureau
Tennessee												
Memphis	U. of Tennessee Coll. of Med.	Dean	Specific Techniques	Varies	On arrangement	Clinical	Medical College, outpatient departments	Med. sch.	M.D.'s	$50-$75	3 (limited)	None
Nashville	Meharry Med. Coll.	Dean	General Medicine	2 weeks	June	Didactic, Clinical, Laboratory	Medical College, hospital, outpatient department	Med. coll.	Negro M.D.'s	$20	14	None
	Vanderbilt U. Sch. of Med.	Director, P. G. Instruction	General and Special	Varies	Throughout year	Didactic and Clinical	Medical School hospital, outpatient department	Med. sch.	M.D.'s	None to $100	119	None
Texas												
Dallas and Galveston	St. Med. Assn., St. Dept. of Health	Secretary, St. Med. Assn.	Obstetrics, Pediatrics	4 weeks	May, June	Lectures, Clinics, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Medical Schools, hospitals, outpatient departments	Med. sch.	M.D.'s licensed to practice in Texas	No	40 (limited to 20 at each Med. Sch.)	U. of Texas Faculty of Med., Galveston, Baylor U. Coll. of Med., Dallas, Federal funds
Vermont												
Burlington	U. of Vermont Coll. of Med.	Dean	Ophthalmology	1 to 4 weeks	Varies	Lectures, Discussions, Clinics	Medical College, outpatient department	Med. coll., out of state	M.D.'s	$50-$100	12	None
Virginia												
Charlottesville	U. of Virginia Dept. of Int. Med., St. Med. Soc.	Exec. Secretary, Dept. of Clin. & Med. Educ., St. Med. Soc.	Recent Advances in Internal Medicine	1 week	June	Lectures, Clinics, Round Table Discussions, Ward Rounds, Demonstrations	Medical College, hospital, laboratories	Med. sch.	M.D.'s	$15	18	.....
Richmond	Med. Coll. of Virginia	Dean	General Medicine	2 weeks	June	Didactic, Clinical	Medical College, hospital, outpatient department	Med. sch.	Negro M.D.'s	$10	32	.....
Washington												
Seattle	U. of Washington Ext. Div., King Co. Hospital System, King Co. Med. Soc.	Director, Univ. Health Center	Preclinical, General and Special	1 week	July	Lectures, Clinics, Demonstrations, Clin. Path. Confs.	University laboratories, hospital, outpatient department	Med. sch., out of state, in state	M.D.'s	$10	230 (average)	.....
Wisconsin												
Madison	U. of Wisconsin Med. Sch.	Dean	General and Special	1 to 6 months	Varies	Clinical	Medical School, hospitals, outpatient department	Med. sch.	M.D.'s	$100 per month, $400 per semester	4 (limited)	None

1. Courses accepted as part of the five year study requisite for certification by the American Board of Psychiatry and Neurology.
2. Negro students compose a majority of those in attendance.
3. Courses offered especially for Fellows of the College or for those preparing either to meet requirements for membership in the College or certification by the American Board of Internal Medicine.

(Continued from page 713)

courses and graduate assemblies totaled 52,012. The individual registration of these groups in the order named was 20,213, 15,399 and 16,400.

4. Medicine, surgery, obstetrics, pediatrics and special subjects were included in the graduate instruction given. Instruction featuring clinical material included laboratory demonstrations, clinics, ward rounds, round table discussions, clinical pathologic and other conferences, symposiums and bedside teaching, as well as other practical clinical demonstrations.

5. Out of state instructors participated as frequently as physicians of the same state. Medical school faculties contributed half of the instructors to itinerant courses and conducted most of the instruction in which clinical material was featured over five or more days.

6. Registration fees were charged infrequently for itinerant courses but in no course did amounts exceed $15. For graduate programs stressing clinical instruction at one center, fees ranged from $5 to $1,000.

FOUNDATIONS

Eight foundations contributed financial aid directly or indirectly for the support of postgraduate courses.

Bingham Associates Fund.—In 1937, through the generosity of William Bingham II, the New England Medical Center in Boston was created for rural physicians of New England to pursue postgraduate study at no expense. This fund makes possible fellowships for a month's work in general medicine with a stipend of $250. Reports to date indicate that these opportunities have been taken advantage of only by Maine physicians, forty-eight having enrolled for the 1939-1940 courses.

Commonwealth Fund of New York.—The Commonwealth Fund gives assistance in extension medical education through grants-in-aid to specific projects and also offers fellowships to practicing physicians in connection with rural hospital and public health programs. Fellowships are provided in Boston hospitals for one month in medicine, pediatrics, obstetrics and office surgery. The stipend is $250 plus tuition and travel expenses. It was reported that twenty-five men took advantage of these fellowships during 1939-1940. This fund provides similar opportunities for physicians in areas throughout the country where there is need for better medical facilities and a higher standard of medical practice.

Mayo Foundation for Medical Education and Research.—Neither the Mayo Clinic nor the Mayo Foundation offers short courses of any kind. However, lectures are concentrated in the fall and winter quarters with a few during the spring and are arranged in such a way that over a three year period a rather general survey of all fields in which training is offered is made by members of the staff. These lectures are planned to coordinate the basic sciences with the clinical fields and are open to visiting physicians. Also about twice a year a series of lectures and demonstrations in some one field is given for a period of one week. There is no charge for this and no arrangements need be made in advance.

W. K. Kellogg Foundation.—Fifteen courses were financed on a fellowship basis whereby the W. K. Kellogg Foundation contributed to physicians the cost of transportation, tuition and approximately $25 a week for other expenses. The maximum contribution to any one physician on any course was $150. During 1939-1940 such subjects as anemias, pneumonia, pediatrics, electrocardiography, ophthalmology, internal medicine, general surgery, x-ray diagnosis, otolaryngology and gynecology were given during periods of from four days to seven weeks. These courses were conducted at the Universities of Michigan, Buffalo, Rochester, Tulane and Harvard and several other locations. Forty-seven physicians took advantage of these opportunities.

Other Foundations.—The Rockefeller Foundation, the Rackham Fund, the Rosenwald Fund, the Edward L. Trudeau Foundation and the Lillia Babbitt Hyde Foundation are organizations which have contributed financial aid, in amounts varying from approximately $500 to $45,000, directly to agencies such as medical schools, universities or associations for the purpose of sponsoring continuation study courses for practicing physicians.

OPPORTUNITIES FOR NEGRO PHYSICIANS

Alabama, the District of Columbia, Georgia, Louisiana, Missouri, Tennessee, Virginia, Florida, North Carolina, Pennsylvania and Texas offered courses for Negro physicians, details of which are referred to in tables 1-B, pages 714-719, and 2, pages 721-724. Organizations participating in these courses included state departments of health, medical schools, miscellaneous medical societies, hospitals, universities, federal agencies and private funds. Instruction was offered in medicine, surgery, obstetrics, pediatrics, tuberculosis, venereal diseases, diseases of nutrition, abdomen and chest. Courses varied in length from three days to three months, the majority being given in the spring or summer. Clinical instruction was given in all but one course. Attendance ranged from eleven to 204, the median being thirty-two. Fees were from $5 to $20 except in four instances, in which no fees were charged. Separate teaching centers have been established at Memphis and Nashville, Tenn., and clinics and courses given which are attended regularly. Postgraduate institutes for Negro physicians, sponsored by local Negro, medical and tuberculosis associations, were held last spring in St. Louis and Pittsburgh.

SCIENTIFIC ASSOCIATIONS

A total of 208 organizations holding scientific sessions of value to practicing physicians during 1939-1940 were noted. Not the least of these was the annual scientific program of the American Medical Association. Ninety-three of these agencies were national in origin, forty-five interstate, forty-nine district and twenty-one metropolitan. Methods of presentation included lectures, clinics, demonstrations, conferences, symposiums and discussions. The sessions varied in length from one to six days and covered all the specialties.

MISCELLANEOUS ACTIVITIES

In order to meet the individual needs of each state in providing continuation study for practicing physicians, medical and special societies, state departments and medical schools have attempted to provide different types of instruction in various states where it is not always possible for the practicing physician to attend organized courses such as those mentioned in the foregoing tables.

The Colorado State Medical Society has made an effort to bring opportunities in postgraduate study to its local physicians by sponsoring symposium programs on venereal disease, cancer control, tuberculosis control, and other subjects before component societies annually at the convenience of each component.

(Continued on page 724)

TABLE 2.—CLINICAL CONFERENCES, GRADUATE ASSEMBLIES AND STUDY COURSES, 1939-1940

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Eligible for Admission	Registration Fee	Approximate No. M.D.'s Attending	Additional Contributing Agencies and Funds
Arkansas												
Little Rock	St. Med. Soc.	Chairman, Comm. on P. G. Instruction	General	2 days	January and October	Lectures, Clinics, Symposiums, Round Table Discussions	Hospital Out-patient Depts.	Med. sch. and in state and out of state	M.D.'s	$5	200	None
California												
Los Angeles and San Francisco	Calif. Heart Assn.	Chairman, Local Program Comms.	Heart Disease	Varies	Varies	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Hospitals, Medical Schools	Med. sch. and in state	M.D.'s	$2 (L.A.) $15(S.F.)	100 (S.F.)	State and local T. B. assns.
San Francisco	U. of Calif. Med. Sch.	Dean	Recently Acquired Knowledge Applicable in Practice, Chronic Diseases	3½ days	January and June	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Hospitals, Hospital Outpatient Depts.	Med. sch.	M.D.'s	$20	81	San Francisco Dept. of Health
Stockton	San Joaquin Co. Med. Soc.	Chairman, Comm. on P. G. Study	General	1 day weekly, 7 times	Fall	Lectures, Clinics, Symposiums	Hospitals, Lecture Rooms	Med. sch. and out of state	M.D.'s	$5	65	None
Colorado												
Denver	St. Med. Soc., St. Health Dept.	Chairman, Comm. on P. G. Clinics and Dir., Div. Mat. & Child Health, St. Health Dept.	Obstetrics, Pediatrics, General Medicine and Surgery	3 days	Midwinter	Lectures, Clinics, Demonstrations, Round Table Discussions	Hospitals and Hotels	Med. sch. and in state and out of state	M.D.'s	$2	508	None
Grand Junction	St. Med. Soc. and Mesa Co. Med. Soc.	Chairman, Western Slope Spring Clinics	General	2 days	Spring	Lectures, Discussions	Hotel	In state and out of state	M.D.'s	$2	155	None
Pueblo	St. Med. Soc. and Pueblo Co. Med. Soc.	Chairman, Pueblo Spring Clinics Comm.	General	2 days	Spring	Lectures Round Table Discussions	Hotel	In state and out of state	M.D.'s	$2	72	None
Connecticut												
New Haven	St. Med. Soc.	Chairman, Comm. on Clinical Congress	General and Special	3 days	September	Lectures, Symposiums, Clinics, Discussions	Hospital and Med. Sch. Auditoriums	Med. sch. in state and out of state	M.D.'s	$2-$3	581	Yale Univ. Sch. of Med.
	Yale Univ. Sch. of Med.	Professor of Obs. and Gyn.	Obstetrics and Gynecology	Once monthly, 8 times	Fall, Winter and Spring	Lectures	Medical School	Med. sch. and in state and out of state	Co. and St. Med. Soc. members, Med. Students	No	60 (average)	None
District of Columbia												
Washington	Med. Soc. of D. C.	Chairman, Comm. on P. G. Educ.	Syphilology	1 day weekly, 2 times	January	Lectures, Clinics, Symposiums, Demonstrations	Co. Med. Soc. Bldg.	Med. sch. and in state and out of state	M.D.'s	$2-$3	179	None
Florida												
Jacksonville	St. Med. Assn., St. Bd. of Health, Fla. Med., Dent. & Pharm. Assn.	Chairman, Med. P. G. Course Comm. St. Med. Assn.	Obstetrics, Pediatrics, Tuberculosis, Venereal Disease	3 days	June	Lectures, Clinics, Symposiums, Round Table Discussions	Hospital	Out of state, med sch.	Negro M.D.'s	No	38	U. S. Public Health Service, U. S. Child. Bur., Julius Rosenwald Fund, Florida T. B. & Health Assn.
Georgia												
Atlanta	Fulton Co. Med. Soc.	Chairman, Atlanta Grad. Med. Assembly	Medicine, Surgery, Biochemistry	4 days	January	Lectures, Round Table Discussions	Hotel	Out of state, med. sch.	Co. and St. Med. Soc. members, Medical students, Interns	$5	387	None
Indiana												
Evansville	St. Med. Assn. and Vandenburgh Co. Med. Soc.	Chairman, Comm. on Med. Educ. & Hosps., St. Med. Assn.	Special branch of Medicine or Surgery each month	Once monthly	Throughout year	Lectures, Clinics	Hospital	In state and out of state	Co. and St. Med. Soc. members	No	43 (average)	.....
Indianapolis	Indiana Univ. Sch. of Med.	Chairman, Dept. of P. G. Educ.	Pediatrics	1 day weekly, 4 times	Spring	Lectures, Clinical Discussions, Case Presentations	Medical school, Hospitals	Med. sch., in state and out of state	M.D.'s	$10	10	Federal funds
Marion	St. Med. Assn. and Grant Co. Med. Soc.	Chairman, Comm. on Med. Educ. & Hosps., St. Med. Assn.	Special branch of Medicine or Surgery each month	Once monthly	Throughout year	Lectures, Clinics	Hospital	In state and out of state	Co. and St. Med. Soc. members	No	43 (average)	.....
Terre Haute	St. Med. Assn. and Vigo Co. Med. Soc.	Chairman, Comm. on Med. Educ. & Hosps., St. Med. Assn.	Special branch of Medicine or Surgery each month	Once monthly	Throughout year	Lectures, Clinics	Hospital	In state and out of state	Co. and St. Med. Soc. members	No	43 (average)	.....

TABLE 2.—CLINICAL CONFERENCES, GRADUATE ASSEMBLIES AND STUDY COURSES, 1939-1940—Continued

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Eligible for Admission	Registration Fee	Approximate No. M.D.'s Attending	Additional Contributing Agencies and Funds
Iowa												
Iowa City	St. Hygiene Lab., St. Dept. of Health	Director, St. Hygiene Lab.	Pneumonia Typing	3 days (repeated)	Fall	Lectures, Laboratory Instruction	St. Hygiene Lab., Labs. of Dept. of Hygiene and Public Health, St. Univ.	Med. sch. and St. Dept. of Health	M.D.'s and Lab. Technicians	No	7	.....
Kansas												
Lawrence	U. of Kansas Sch. of Med.	Dean	General	4 days	Spring	Clinics	Hospital Outpatient Dept.	Med. sch.	M.D.'s	No	132	.....
Kentucky												
Louisville	Jefferson Co. Med. Soc.	Chairman, Program Comm.	Hematology, Vitamins	Twice monthly, 10 months	Throughout year	Lectures	Hospital	Med. sch.	M.D.'s	No	88 (average)	.....
	St. Med. Assn.	Chairman, Comm. on P. G. Course in Dis. of Child.	Pediatrics	1 day weekly, 10 times	Spring	Lectures, Clinics, Demonstrations, Round Table Disc.	Hospital	Med. sch.	M.D.'s	$5	19	None
Louisiana												
Lafayette	Louisiana St. U. Grad. Sch. of Med. and Ext. Div.	Dean, Grad. Sch. of Med.	General	2 days	March	Lectures, Discussions	Hospital	Med. sch.	Co. and St. Med. Soc. members	$1	98	None
New Orleans	New Orleans Grad. Med. Assembly	President	General	4 days	February	Lectures, Clinics, Demonstrations, Round Table Disc., Clin. Path. Confs.	Hotel	Med. sch. and out of state	M.D.'s	$10	1,000	None
Maine												
Waterville	St. Med. Assn.	Chairman, Comm. on Grad. Educ.	General	2 days	October	Lectures, Clinics, Panel Discussions	Hospitals, Hotel	In state and out of state	Co. and St. Med. Soc. members	...	117	.....
Massachusetts												
Cambridge	St. Med. Assns. of Mass., N. H., R. I., Me. and Vt.	Chairman, New England P. G. Assembly Comm.	General	2 days	Fall	Lectures	Theater	Med. sch. and out of state	Licensed physicians	$3	776	Harvard Univ.
Michigan												
Detroit	Wayne Co. Med. Soc., Detroit Dept. of Health	Administrative Officers	Preventive Medicine	Once weekly, 6 times	Fall and Spring	Lectures, Symposiums, Demonstrations, Round Table Discussions	Hospitals, Auditorium	Med. sch., in state and out of state	M.D.'s	No	982	Wayne Univ. Coll. of Med., Mich. Br. Amer. Acad. of Ped.
Minnesota												
Minneapolis	St. Dept. of Health, St. Med. Assn., Univ. of Minn. Med. Sch.	Executive Officer, St. Dept. of Health	Obstetrics, Pediatrics	3 days	Spring	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions	Hospitals, U. of Minn. Center for Continuation Study	Med. sch.	Co. and St. Med. Soc. members	$3	129	Social Security Bd.
Missouri												
Kansas City	Kansas City S. W. Clin. Soc.	Director of Clinics	General	2 days (Spring) 4 days (Fall)	Spring and Fall	Lectures, Round Table Discussions	Hospital, Auditorium	Med. sch., in state and out of state	M.D.'s, Med. Students	No (Sp.) $5 (F.)	956 (F.)	None
St. Joseph	St. Joseph Clin. Soc.	1st Vice-President	General Medicine and Surgery	3 days	Spring	Lectures, Clinics, Demonstrations, Round Table Disc., Clin. Path. Confs.	Hospitals	In state and out of state	M.D.'s	No	100	None
St. Louis	St. Louis Clinics	President	General	4 days	May	Lectures, Clinics, Demonstrations, Round Table Disc., Clin. Path. Confs.	Hospitals	Med. sch. and in state	M.D.'s	$10	100	None
New Jersey												
Jersey City	St. Med. Soc.	General Chairman, Fall Clin. Conf.	General	2 days	November	Lectures, Clinics, Demonstrations, Round Table Disc., Clin. Path. Confs.	Hospitals	In state	M.D.'s	No	383	Hudson Co. Med. Soc.
Orange	St. Health Dept.	Chief, Div. of V. D. Control	Syphilis	1 day weekly, 6 times	October and November	Lectures, Clinics, Demonstrations	Hospital, Univ. of Pa. Med. Sch., Phila.	Out of state, med. sch. and in state	New Jersey licensed M.D.'s	No	73	Univ. of Pa. Sch. of Med.

New York												
Albany	St. Dept. of Health, Albany Med. Coll.	Director, Div. of Comm. Dis., St. Dept. of Health	Public Health	2 days plus 11 field trips	Throughout year	Clinics, Demonstrations, Round Table Discussions, Conferences, Field Trips	Hospitals, Laboratories	Med. sch., health officers and lab. directors	Licensed physicians	$30	95	None
New York City	American Cong. of Physical Therapy	Executive Director	Physical Therapeutics	4 days	August-September	Lectures, Clinics, Symposiums, Demonstrations, Round Table Discussions	Hospitals, Outpatient Departments	Med. sch. in state and out of state	M.D.'s and Phys. Ther. Technicians	$25	50	None
	N. Y. C. Dept. of Health, Pneumonia Control Div.	Asst. Director, Bureau of Labs.	Pneumonia Therapy	1 session, 11 times	March and April	Lectures	Auditoriums	Med. sch.	Members of organizations requesting programs	No	1,015	None
	Queens Co. Med. Soc.	Chairman, P. G. Educ. Comm.	General	Varies	Varies	Lectures, Round Table Discussions, Clin. Path. Confs.	Hospital, Outpatient Department	Med. sch.	M.D.'s	No	953	None
	Tuberculosis Sanat. Conf. of Metro. N. Y.	Chairman, Clinical Section	Chronic Pulmonary Diseases	4 sessions a year	Oct., Dec., Feb., Apr.	Lectures, Symposiums, X-Ray Presentations	Hospital, Med. Coll.	Med. sch., in state and out of state	M.D.'s	No	900	New York T. B. and Health Assn., local T. B. assns.
Syracuse	St. Med. Soc.	Chairman, Council Comm. on Public Health & Educ.	Nutrition and Diet	1 day weekly, 4 times	October and November	Lectures, Demonstrations	Med. Coll., Hospital	In state	M.D.'s, Dietitians, etc.	No	108	St. Health Dept., N. Y. Dietetic Assn., Syracuse Univ. Coll. of Med.
	Onondaga Co. Med. Soc.	Chairman, Med. Educ. Comm.	Clinical Pathology	1 day weekly, 6 times	Varies	Lectures, Demonstrations, Round Table Discussions, Clin. Path. Confs.	Hospitals, Outpatient Departments	Med. sch., in state and out of state	M.D.'s, Med. Students	$5-$10	30	St. Med. Soc. and St. Dept. of Health
North Carolina												
Durham	St. Dept. of Publ. Instr., Div. of Coop. in Educ. and Race Relations	Secretary, Subcomm. for Negro Health and Educ.	Clinical Medicine and Surgery	3 days	October	Lectures, Clinics, Symposiums	Hospital	Med. sch.	Negro M.D.'s	$5	...	Duke Univ., Univ. of N. C.
Ohio												
Cleveland	Western Reserve Univ. Sch. of Med., City Hospital	Chairman, Comm. on Programs, Publications and Educ.	Practical Reviews of Special Subjects	11 lectures	October	Lectures, Demonstrations, Discussions	Hospital	Med. sch.	M.D.'s	No	94	None
Oklahoma												
Oklahoma City	Oklahoma City Clin. Soc.	Director of Clinics	General Medicine	4 days	Fall	Lectures, Symposiums, Round Table Discussions	Lecture Rooms	Med. sch. in state and out of state	M.D.'s	$10	547	None
Pennsylvania												
Philadelphia	Mercy Hospital	Director, P. G. Comm.	Diseases of Nutrition, Abdomen and Chest	3 days	May	Lectures	Hospital	Med. sch., in state and out of state	Negro M.D.'s	No	76	None
Pittsburgh	Allegheny Co. Med. Soc.	Chairman, Grad. Educ. Comm.	General	1 day weekly, 4 to 6 times	Spring and Fall	Lectures, Clinics, Demonstrations, Round Table Disc.	Hospitals, Outpatient Departments	Med. sch. and in state	M.D.'s	$10-$30	59	.....
Rhode Island												
Providence	St. Dept. of Health	Chief, Div. of Mat. and Child Health	Obstetrics	1 day weekly, 5 times	February and March	Lectures, Demonstrations, Movies	Hospital	In state	M.D.'s	No	75	None
South Carolina												
Anderson	Anderson Co. Med. Soc.	President, Piedmont P. G. Clin. Assembly	General Medicine and Surgery	3 days	September	Lectures, Clinics, Round Table Disc.	Hospital	Med. sch.	Licensed physicians	$3	100	None
South Dakota												
Watertown	St. Med. Assn.	Secretary	General	3 days	May	Lectures, Round Table Discussions, Movies	Hotel	Med. sch., in state and out of state	Co. and St. Med. Soc. members	No	...	St. Bd. of Health, U. S. Public Health Service
Tennessee												
Knoxville	Knox Co. Med. Soc.	Secretary, Tenn. Valley P. G. Med. Assembly	General	3 days	June	Lectures, Demonstrations, Round Table Discussions	Hotel	Med. sch. and out of state	M.D.'s	$4	375	None
Memphis	Mid-South P. G. Med. Assembly	Secretary	General Medicine	4 days	February	Lectures, Round Table Discussions	Hotel	Med. sch., in state and out of state	M.D.'s, Sr. and Jr. Med. Students	$5	750	None
Texas												
Dallas	Dallas Southern Clin. Soc.	Director of Clinics	General	4 days	March	Lectures, Clinics, Symposiums, Demonstrations, Round Table Disc., Clin. Path. Confs.	Hotel and Hospital	Med. sch., in state and out of state	M.D.'s, Interns, Sr. Med. Students	$10	674	None
Houston	P. G. Med. Assembly of S. Texas	Secretary	Medical Specialties	3-4 days	December	Lectures, Round Table Discussions	Hotel	Med. sch. and out of state	M.D.'s, Interns, Med. Students	$10	700	None

TABLE 2.—CLINICAL CONFERENCES, GRADUATE ASSEMBLIES AND STUDY COURSES, 1939-1940—Continued

Location of Course	Sponsoring Agencies	Director of Program	Subjects	Duration of Course	Time Given	Type of Instruction	Facilities for Graduate Programs	Instructors	Eligible for Admission	Registration Fee	Approximate No. M.D.'s Attending	Additional Contributing Agencies and Funds
Prairie View	St. Dept. Health, Texas T. B. Assn.	Director, Mat. & Ch. Health Div., St. Dept. Health, Exec. Sec'y, T. B. Assn.	Tuberculosis, Syphilis, Obstetrics, Pediatrics	4 days	March	Lectures, Clinics, Demonstrations, Ward Walks	Hospital, Lecture Rooms of St. Coll.	In state and out of state	Negro M.D.'s	No	68	Lone Star St. Med., Dent. & Pharm. Assn., Prairie View State Coll. & Hosp., U. S. Child. Bureau, National T. B. Assn.
San Antonio	International P. G. Med. Assembly of S. W. Texas	Chairman, Program Comm.	General	3 days	January	Lectures, Round Table Discussions	Hotel	Out of state	M.D.'s	$10 (members only)	800	None
Utah Salt Lake City	St. Med. Socs. of Utah, Colo., N. M., Wyo.	Chairman, Rocky Mt. Med. Conf. Exec. Comm.	Diseases common to Rocky Mt. states	3 days	Summer of alternate years	Lectures, Round Table Discussions	Hotel	Med. sch. and out of state	M.D.'s	$3	484	.....
Vermont Burlington	St. Med. Soc., Univ. of Vermont Coll. of Med.	Dean	General Medicine	2 days	May	Lectures, Clinics, Symposia, Panels, Round Table Discussions	Hospital, Med. Coll.	Med. sch.	M.D.'s	No	150	None
Virginia Charlottesville	St. Med. Soc., Univ. of Virginia Med. Sch.	Chairman, Comm. on Grad. Clinics	General	1-2 days	April and November	Lectures, Clinics, Round Table Disc.	Med. Sch. Amphitheater	Med. sch.	M.D.'s	No	205	None
Washington Spokane	Pacific N. W. Med. Assn.	Secretary	General	4 days	July	Lectures	Hotel	Med. sch. and out of state	M.D.'s	$12	257	None
Wisconsin Milwaukee	Med. Soc. of Milwaukee Co.	Chairman, Comm. on P. G. Educ.	Endocrinology, Allergy	1 day weekly, 4 times	Spring and Fall	Lectures, Lantern Slides	Med. Sch. Auditorium	In state and out of state	Co. and St. Med. Soc. members	None, $3	310	None

(Continued from page 720)

In Connecticut the state department of health has cooperated with the state medical society by presenting to thirteen local medical societies a one evening meeting devoted to pneumonia. The health department paid an honorarium to secure an outside speaker. The total attendance at these lectures was 859.

The Kentucky State Board of Health has held a number of conferences before local medical societies at which two pediatricians have presented papers, held clinics and made talks on general health measures before professional and lay audiences.

During the past two years the Massachusetts Medical Society, in cooperation with the state health department, the United States Public Health Service and the United States Children's Bureau, conducted teaching clinics in gonorrhea and syphilis. Student physicians attended 150 such clinics at the Boston Dispensary and the Massachusetts General Hospital Syphilis Clinic. Registration was free. Any legally registered physician in Massachusetts was eligible to attend.

Facilities of the University of North Dakota School of Medicine were available to physicians for special work such as anatomic dissection or experimental work in physiology, pathology, dietetics and surgery. Time spent varied from a few hours or a day to a week or several months or a year. Charges were nominal and represented only cost of materials used.

The Division of Venereal Disease Control of the Oregon State Board of Health cooperated with the Committee of the Oregon State Medical Society by providing, on request, speakers on syphilis or gonorrhea for meetings of local medical societies or hospital staffs. Speakers in five instances were from the department of dermatology and syphilology of the universities of Oregon and California and the department of urology of the University of Oregon and in two instances from the Division of Venereal Disease Control. These speakers were provided to local societies through the use of federal funds.

In Rhode Island a group of five members of the American Academy of Pediatrics have taken over one meeting of each district society during the year for a panel discussion on preventive inoculations. Each member of the panel is paid $25 for each meeting.

A similar activity has been carried on in Utah under the sponsorship of the Utah Academy of Pediatrics. On request of a component medical society, three pediatricians go to one of the society's regular meetings to hold discussions. This is done on a panel or round table basis. The academy members give their time, and the state board of health pays the expense of the trip, which averages from $25 to $50, depending on the distance covered. The same service is offered by Utah obstetricians.

Another effort of the Division of Maternal and Child Health of the Utah State Board of Health was the employment of a consultant in obstetrics and one in pediatrics to act in a teaching and consultative capacity. Briefly, the duties of the obstetrician were to visit maternal health conferences, to give case consultation service in rural areas, and individual or group instruction in obstetrics to rural physicians, to assist in staff education programs in certain phases of clinical obstetrics and to conduct a study of heart disease as a complicating factor in maternal morbidity and mortality in Utah. His activities were almost entirely on an

individual basis and he worked with approximately ninety physicians. The pediatrician gave discussions before medical society groups and hospital staff meetings and gave individual consultations on request.

In Virginia the state medical society and the state department of health annually sponsor chest x-ray conferences at medical society meetings.

The sum of approximately $2,500 was budgeted by the Wyoming State Department of Health for postgraduate instruction. This service provides speakers for local medical society scientific programs in obstetrics, pediatrics and orthopedics. The funds for financing this instruction were made available through the Social Security Board.

PRINCIPLES REGARDING GRADUATE MEDICAL SCHOOLS

Approved by the House of Delegates of the American Medical Association, June 1923

(Revised June 11, 1940)

I. Organization

A graduate medical school should be incorporated as a nonprofit institution. Its board of trustees should be composed of public spirited men or women having no financial interest in the operations of the school or its associated hospitals. The trustees should serve for fairly long and overlapping terms. If the choice of trustees is vested in any other body than the board itself, that should be clearly stated. Officers and faculty of the school should be appointed by the board.

II. Administration

There should be careful and intelligent supervision of the school by a dean or other executive officer who holds and has sufficient authority to carry out the ideals of present day graduate medical education.

The graduate school shall maintain a full and accurate record of each student's qualifications:

(*a*) medical degree and licensure,
(*b*) internship or equivalent training,
(*c*) residency or equivalent training,
(*d*) attendance in school,
(*e*) proficiency as appraised by
  (1) medical contributions,
  (2) research,
  (3) membership in county medical society or other scientific bodies,
  (4) examination,
  (5) qualifying opinion by student's teachers.

In the case of study for a specialty, a full record of the prescribed course and duration of study with attendance and final estimate of proficiency should be made.

The graduate school should publish an annual announcement and bulletins or catalogues giving detailed information in regard to its courses of instruction, its teachers and details of the laboratories, dispensaries and hospital patients. It should outline the various opportunities for study offered in both fundamental and clinical branches and a list of those to whom advanced degrees or certificates were granted.

III. Faculty

The graduate medical school should have a faculty well trained in and responsible for instruction in all subjects in which courses for study are announced, including the essential review and advanced work in the preclinical sciences. This faculty should be organized under competent department heads.

IV. Laboratories

The school should possess well equipped laboratories. The postmortem rate shall be in conformity to the rules for approved hospitals.

V. Clinical Facilities

The graduate medical school should have control of a teaching hospital with adequate outpatient clinic. It should have sufficient material to enable it to provide satisfactory clinical study in the fields of medicine in which courses are offered, so that students may personally examine patients in the hospital wards and in the dispensary and make the essential laboratory examinations.

VI. Library

The graduate school should have a medical library under the supervision of a competent librarian and staff. It should include text and reference books, and bound medical periodicals and the essential indexes. For any library, the *Quarterly Cumulative Index Medicus* is essential. It should receive regularly the more important medical periodicals, the latest numbers of which are easily accessible.

The school should maintain adequate museum facilities, especially in anatomy and pathology.

VII. Resources

Experience has shown that it is not possible to maintain high educational standards on income from student fees alone. Other sources of financial support are deemed essential for the proper conduct of graduate medical schools and should be listed in the annual announcement.

VIII. Requirements for Admission

(*a*) A physician who does not intend to limit his practice to a specialty shall present satisfactory evidence that he is a graduate of a medical school and that he is licensed to practice in the state in which he resides.

(*b*) The physician who desires to prepare himself to specialize, or who has limited his practice to a specialty, shall present satisfactory evidence that he is a graduate of a medical school approved by the Council on Medical Education and Hospitals and that he has completed at least one year's internship in a hospital approved by the Council or the equivalent.

IX. Curriculum

The graduate school should have its various courses designed to prepare the physician for the practice of a specialty so graded that the student, if he desires, may follow a progressive and systematic program of two or more years' duration. If at some previous time, or in other institutions, the student has satisfactorily completed certain portions of the work, he may be given credit for the same, with a proportional advanced standing. Institutions offering courses leading to restricted practice in a specialty should provide:

(*a*) courses in anatomy, pathology, chemistry and the other basic preclinical sciences which apply to the respective specialties;
(*b*) clinics in which students personally examine patients in hospital wards and outpatient departments and follow these patients throughout their illness;
(*c*) courses of operative and laboratory—cadaver—technic appropriate to each specialty, and
(*d*) for those especially qualified, opportunity for research work with proper critical supervision should be provided.

Short operative courses offered in any of the clinical specialties should include a full review with diagnostic and clinical courses so arranged that they become integral parts of a complete program.

X. Advanced Degrees and Certificates

No advanced degree or certificate should be granted to any one who has not demonstrated by examination or otherwise proficiency in his specialty, nor to any one who has not completed at least one academic year in full time study in the institution granting the certificate.

APPROVED EXAMINING BOARDS IN MEDICAL SPECIALTIES

The announcements of approved examining boards in medical specialties are reproduced herewith.

AMERICAN BOARD OF ANESTHESIOLOGY, Inc.
AN AFFILIATE OF THE AMERICAN BOARD OF SURGERY

RALPH M. WATERS, President, Madison, Wis.
HENRY S. RUTH, Vice President (Liaison Officer to the American Board of Surgery), Merion, Pa.
PAUL M. WOOD, Secretary-Treasurer, 745 Fifth Avenue, New York.
JOHN S. LUNDY, Rochester, Minn.
E. A. ROVENSTINE, New York.
H. BOYD STEWART, Tulsa, Okla.
RALPH M. TOVELL, Hartford, Conn.
PHILIP D. WOODBRIDGE, Boston.
CHARLES F. MCCUSKEY, Glendale, Calif.

HISTORY

The plan for this organization was devised to conform with those of other examining boards in medical specialties, by a committee representing the American Society of Anesthetists, Inc., the American Society of Regional Anesthesia, Inc., and the Section on Surgery of the American Medical Association. These organizations adopted the tentative plans submitted, and the formation of the American Board of Anesthesiology, Inc., an affiliate of the American Board of Surgery, Inc., was completed on June 2, 1937. The Advisory Board for Medical Specialties, and the Council on Medical Education and Hospitals of the American Medical Association approved the affiliation in 1938. Diplomates of this Board will be designated "A.B. 13" in the Directory and Biographical Departments of the American Medical Association.

PERSONNEL

The members of the examining board were elected by the American Society of Regional Anesthesia, Inc., the American Society of Anesthetists, Inc., and the Section on Surgery of the American Medical Association. Each cooperating society has three representatives, thus giving national and regional representation in the composition of the board.

The term of membership is for six years. Each cooperating association has the appointing power of its representatives subject to the approval of the board.

PURPOSES

1. To establish criteria of fitness to be designated a specialist in the practice of anesthesiology.

2. To improve educational facilities and practice in medical schools and hospitals, and furnish lists of these, together with lists of individual instructors who give adequate instruction and training in anesthesiology.

3. To arrange, control, and conduct examinations to determine the qualifications, and grant a certificate to those who voluntarily apply and meet the required standards. Such certification will serve to provide the public and the professions with the opportunity to select the best available service.

(Conferring of degrees is a prerogative of the universities, and the Board of Anesthesiology makes no attempt to grant degrees, regulate or control the practice of anesthesiology in any way whatsoever, by license or restriction.)

QUALIFICATIONS FOR ELIGIBILITY TO CERTIFICATION

A. *General.*—1. An applicant's moral and ethical standing in the profession must be satisfactory to the entire board. The board must be assured that the applicant is engaged in the practice of anesthesiology as a specialty and that he intends to continue to be so engaged.

2. Membership is required in the American Medical Association or membership in such other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association. Membership in other societies shall not be required.

3. Practice must be limited to anesthesiology, in accordance with the requirements of the American Board of Surgery.

4. In exceptional instances the board may, in its discretion, accept for examination candidates who have met all the preliminary requirements and have clearly demonstrated their identity as an anesthetist over a period of years but whose formal training does not comply with the full requirements to be exacted in the future.

B. *Professional Standing.*—1. An applicant must be a graduate of a grade A school in the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association, or a graduate of an approved foreign school.

2. Satisfactory evidence must be supplied of completion of an internship of not less than one year in a hospital approved by the same council, or its equivalent in the opinion of the board.

3. An applicant must establish in a manner satisfactory to the Board of Anesthesiology: that he is a physician duly licensed by law to practice medicine; that he is of high ethical and professional standing, and that he has received adequate special training in anesthesiology.

C. *Special Training and Practice.*—1. Before certification the candidate must have had an active experience limited to anesthesiology of not less than four calendar years. Applicants accepted after Jan. 1, 1941, will be required to have an active experience of five years.

2. The board recommends the inclusion of at least two years of carefully supervised instruction in the clinical phases of anesthesiology in hospital clinics, dispensaries, and diagnostic laboratories recognized by the Council on Medical Education and Hospitals of the American Medical Association as competent in the teaching and practice of anesthesiology. In addition, instruction in anatomy, physiology, pharmacology, biochemistry and other basic sciences which are necessary to the proper understanding of the problems involved in the specialty of anesthesiology is required.

(The board believes that for those entering the specialty after Jan. 1, 1942, the facilities for special training in anesthesiology will be increased and such training will be sufficiently standardized that special training in anesthesiology may be interpreted to include after that date:

(*a*) A period of study, after the internship, of not less than three years in clinics, dispensaries, hospitals, and laboratories recognized by the Council on Medical Education and Hospitals of the American Medical Association as competent to provide a satisfactory training in the special field of anesthesiology.

(*b*) A total period of not less than six years of special training and practice in anesthesiology after internship will be required before certification can be granted.)

EXAMINATIONS

The qualifying examination will be divided into Part I, written, Part II, oral, and Part III, practical.

PART I

1. An applicant, to be eligible for Part I, must meet all requirements and be certified by the central office of the board after his credentials have been approved by the secretary of the board, who shall have recourse to the Examination Committee in doubtful cases.

2. At the board's discretion a candidate may apply for the written examination on basic science and clinical practice on the completion of his courses of special training in these subjects.

3. Part I may be given simultaneously in several centers, throughout the United States, which the board may determine suitable for the purpose.

PART II

1. In order to be eligible for Part II, a candidate must have successfully passed Part I in addition to having met the necessary requirements and having presented definite evidence of an adequate experience in anesthesiology satisfactory to the board.

2. It is probable that Part II examinations will be held at the same time and place as the examinations of the American Board of Surgery. Later, however, as the demand grows, it may be necessary to establish subsidiary centers where this part may be held. At that time it will be necessary for the board to appoint subsidiary boards, consisting of those already qualified to actually conduct such examinations.

PART III

1. It is believed that the practical examination in this field is slightly different from that in most specialties. The examiners would be expected to observe the work of candidates in their own or similar operating room surroundings, their relations to other staff members, and investigate their professional standing.

CONDUCT OF EXAMINATION

Carefully conducted and thorough examinations will be required of candidates. The aim will be to avoid unduly exacting standards above present facilities for study and practice in anesthesiology, and on the other hand, to prevent laxity, which would nullify the main purpose of the certificate. Thus the type of the examination will depend on a careful review of the work done, years of practice, special courses of study, and professional standing of the applicant.

Written examinations will cover such topics as anatomy, biochemistry, physiology, pharmacology, pathology, physical diagnosis, therapeutics, clinical practice, and public health in relation to anesthesiology.

Oral examinations will cover topics in the above list, and such questions on physics and mechanics as are important in anesthesiology, especially dealing with electrical theories and the proper handling of high pressure gases and flammable agents.

Practical demonstrations will be required of the use of various types of apparatus and technics. Cadavers may be utilized by the candidates to demonstrate anatomical landmarks and technics important in regional anesthesia and for therapeutic and diagnostic procedures. Candidates should also be prepared to demonstrate methods of artificial respiration, and intravenous and pneumotherapy.

GRADES

A candidate must receive a passing average for each part, to be entitled to certification. No candidate shall pass a part who does not receive a grade of 60 per cent or more in each subject of such part. An average grade of 75 per cent shall be required for passing.

A candidate who fails in his examination in Part I will have his papers reviewed by the entire board and will be entitled to reexamination at yearly intervals for two consecutive years without further payment of fee. The board may, however, for sufficient reason, deny a candidate the privilege of reexamination.

FEES

The fee shall be $75, $25 of which must accompany application. Filing fee of $10 included in this first payment is not returnable in case of rejection of application.

This board is a nonprofit organization, all fees to be used to extend the existing facilities for training in anesthesiology, after deducting necessary expenses for maintenance of the office, and the conducting of examinations. The board reserves the right to increase the fee when found necessary.

REVOCATION OF CERTIFICATE

All certificates issued by the board shall be subject to revocation by the board at any time, in case it shall determine in its sole judgment that a candidate who has received a certificate either was not properly qualified to receive it or has become disqualified since its receipt.

ADDITIONAL INFORMATION

Every candidate applying for certification must personally appear before the board before being certified.

Application blanks may be secured through the Secretary of the American Board of Anesthesiology. They must be completely filled out, accompanied by the other required credentials, and filed with the secretary of the board at least sixty days prior to the date of examination. Application blanks contain the following statement:

"I hereby make application to the American Board of Anesthesiology, Inc., an affiliate of the American Board of Surgery, for the issuance to me of a Certificate of Qualification as a Specialist in Anesthesiology and for examination relative thereto, all in accordance with and subject to its rules and regulations. I agree to disqualification from examination or from the issuance of a Certificate of Qualification or to forfeiture and redelivery of such certification in the event that any of the statements hereinafter made by me are false or in the event that any of the rules governing such examinations are violated by me or in the event that I did not comply with or shall violate any of the provisions of the Certificate of Incorporation or By-Laws of the American Board of Anesthesiology, Inc., an affiliate of the American Board of Surgery, or both, as then constituted. I agree to hold the American Board of Anesthesiology, Inc., an affiliate of the American Board of Surgery, its members, examiners, officers and agents free from any damage or complaint by reason of any action they, or any of them, may take in connection with this application, such examination, the grade or grades given with respect to any examination, or the failure of said board or corporation to issue to me such Certification of Qualification."

Proper forms for making application and other information will be furnished by the secretary-treasurer.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY

HOWARD FOX, President, New York.
HAROLD N. COLE, Vice President, Cleveland.
C. GUY LANE, Secretary-Treasurer, 416 Marlboro Street, Boston.
CHARLES C. DENNIE, Kansas City, Mo.
J. GARDNER HOPKINS, New York.
PAUL A. O'LEARY, Rochester, Minn.
FRANCIS E. SENEAR, Chicago.
ARTHUR W. STILLIANS, Chicago.
FREDERICK D. WEIDMAN, Philadelphia.

ORGANIZATION

At the 1931 meeting of the American Dermatological Association, a committee was appointed to determine the advisability of forming an American Board for the certification of competent practitioners in this specialty similar to boards created by the ophthalmologists, the otolaryngologists and by the obstetricians and gynecologists. A similar committee was appointed by the Section on Dermatology and Syphilology of the American Medical Association at its meeting in the same year. A favorable report was rendered by each committee at the 1932 meeting of each of the above organizations.

The American Dermatological Association voted to accept the report of this committee, and the president appointed the following four members to represent the Association on the newly formed American Board of Dermatology and Syphilology:

Dr. Jay F. Schamberg, Philadelphia.
Dr. Howard Fox, New York.
Dr. Harold N. Cole, Cleveland.
Dr. Arthur W. Stillians, Chicago.

The Section on Dermatology and Syphilology of the American Medical Association also accepted the report of its committee and the chairman appointed the following members to serve as its representatives:

Dr. Howard Morrow, San Francisco.
Dr. William H. Mook, St. Louis.
Dr. George M. MacKee, New York.
Dr. C. Guy Lane, Boston.

The first meeting of the board was held in New Orleans on May 11, 1932, at which time officers were elected.

Another meeting was held on Nov. 11, 1932, in Philadelphia at which the organization was completed and resolutions were adopted concerning the proper procedure to be followed by the board. On Nov. 29, 1932, the board was incorporated under the laws of the state of Delaware.

In 1937 the American Academy of Dermatology and Syphilology was formed, and in November 1939 a plan was finally approved whereby the board would be composed of three representatives from each national dermatologic society, viz., the American Dermatological Association, the Section on Dermatology and Syphilology of the American Medical Association, and the American Academy of Dermatology and Syphilology.

PURPOSES

The board has been established primarily to determine the competence of physicians who specialize in dermatology and syphilology. It will prescribe adequate standards of fitness, conduct examinations to test the qualifications of voluntary candidates and grant certificates to candidates who successfully fulfil the requirements of the board.

A second object is to publish lists of physicians, who shall have been certified by the board, for the benefit of hospitals, medical schools, other physicians and the lay public.

A third object is to improve the standards of practice of dermatology and syphilology (1) by investigation of medical school curriculums and (2) by investigation and encouragement of adequate facilities for graduate instruction in this specialty.

CERTIFICATES

A certificate will be issued to each candidate who meets the requirements of the board, to the effect that the holder of the certificate has had adequate training in dermatology and syphilology and has successfully fulfilled the requirements of the board.

It is expected that medical schools, hospitals and physicians, as well as the lay public, will utilize the certificate from this board as a proof of adequate preparation in the field of dermatology and syphilology, and of fitness of candidates for positions under their control. For this purpose lists of those holding certificates from the board will be available for inspection and

will be published from time to time by the board. Diplomates will be identified in the Directory of the American Medical Association and the Directory of Medical Specialists.

A certificate granted by this board does not of itself confer or purport to confer, any degree, or legal qualifications, privileges, or license to practice dermatology or syphilology. The board does not intend to limit or interfere with the professional activity of any duly licensed physician. Its aim is to elevate the standard of qualification for specialists in this field and to certify as specialists those who voluntarily comply with the requirements of the board.

Certificates will be issued only to physicians in the United States and its possessions, in Canada and in Cuba.

APPLICATION AND FEE

The board desires to appraise the candidate's educational opportunities (premedical, medical and dermatologic), the character of the men under whom he has worked, his hospital and teaching positions, original investigations, contributions to dermatologic literature, membership in medical societies and his local and general reputation.

For this purpose, application must be made on a special blank, which may be obtained from the secretary. No application will be considered unless made on the regular application blank. This application should be forwarded at least two months before the date of examination together with the required reprints, photographs and the fee of $35. This fee will not be returned, and no application will be considered until the fee is received. This fee has been carefully computed and is used entirely for administrative purposes. Members of the board do not receive any compensation except for actual expenses connected with holding the examinations.

Make checks payable to American Board of Dermatology and Syphilology, Inc.

EXAMINATIONS

Applicants classified in group B will be required to pass a written examination. This written examination on clinical and laboratory subjects including cutaneous pathology will be held simultaneously at stated intervals in different parts of the country, approximately two months before the oral examination.

Applicants classified in both groups A and B will be required to pass an oral, clinical and laboratory examination. This examination will be conducted in a clinic or hospital ward where individual cases will be discussed with each candidate. The examination will include various basic subjects as related to the skin: histopathology, mycology, allergy and physics of physical therapy, etc.

The oral examination will be held near the time and place of the annual meeting of the American Academy of Dermatology and Syphilology. This examination will be held only at the time of regular meetings of the board.

Examinations are designed to test the candidate's fitness to practice dermatology and syphilology as a specialty. The board will endeavor to adapt this examination to the candidate's experience and years of practice. It will try especially to ascertain the breadth of his clinical experience, his knowledge of recent literature of dermatology and syphilology and his general qualifications as a specialist in this branch of medicine.

Except in special circumstances, applicants shall take the examination within the year following the filing of application and the deposit of the fee.

Whenever an applicant fails to pass the examination, the board if requested will make suggestions as to suitable courses of instruction for the purpose of overcoming deficiencies in his knowledge of the specialty.

REEXAMINATIONS

If the candidate fails or is "conditioned" in an examination he will be admitted to a second examination after one year, but within three years, and must give sixty days' notice of his intention to appear for reexamination. If a candidate who has failed or has been conditioned does not appear for reexamination before the expiration of three years, he will be required to make a new application and pay an additional fee of $35 before reexamination.

A candidate having failed twice must file a new application and pay an additional fee of $35.

REQUIREMENTS FOR CERTIFICATION

I. General Requirements

1. High ethical and professional standing.
2. Citizenship in the United States or citizenship—meaning native citizens—in Canada and Cuba.
3. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association.
4. A license to practice medicine.
5. Satisfactory completion of an internship of not less than one year in a hospital approved by the same Council.
6. Adequate training in dermatology and syphilology as a specialty.

Membership in the American Medical Association is recommended.

II. Special Requirements

Applicants for certification by the board are classed in two groups as follows:

Group A consists of physicians who have limited their practice mainly to dermatology and syphilology for ten or more years, including a period of training satisfactory to the board.

Group B consists of physicians who have practiced dermatology and syphilology at least five years, including their period of training. For group B candidates to be examined from Jan. 1, 1940, to Jan. 1, 1945, the board will require two years of full-time planned training in clinical dermatology and syphilology, including adequate instruction in the following subjects related to the skin: histopathology, mycology, physics as related to physical therapy, and allergy.

III. Future Special Requirements

Beginning Jan. 1, 1945, additional requirements will become effective. By 1940 it is expected that sufficient facilities will be developed throughout the country to provide for three years' training of graduate students in accordance with the minimum requirements suggested by the Advisory Board for Medical Specialties and outlined in a syllabus issued by the board. These minimum requirements of special training for admission to examination in 1945 shall be as follows:

1. A period of study after the internship of not less than three years in clinics, dispensaries, hospitals or laboratories recognized by the same Council and approved by the American Board of Dermatology and Syphilology as competent to provide a satisfactory training in dermatology and syphilology.
2. This period of specialized training shall include:

(*a*) Graduate training in the basic medical sciences which are necessary to the proper understanding of the disorders and treatment involved in this specialty.

Instruction in the following fundamental subjects as related to the skin is deemed advisable by the board: embryology, histology, chemistry, physiology, bacteriology, mycology, parasitology, pathology, immunology, serology, pharmacology and materia medica, and physics of physical therapy.

(*b*) An active experience of not less than eighteen months in hospitals, clinics, dispensaries or diagnostic laboratories recognized by the same Council and approved by the American Board of Dermatology and Syphilology as competent to provide an adequate preparation.

(*c*) Examinations in the basic medical sciences of a specialty as well as in the clinical, laboratory and public health aspects.

3. An additional period of not less than two years of study and/or practice.

Therefore, candidates beginning their training after Jan. 1, 1940, for certification by this board must plan for a three years course of systematic training.

In 1945 and thereafter admission to examination by this board will be permissible only to applicants with such training. Classes A and B will be abolished and all candidates will be required to fulfil the same requirements.

REVOCATION OF CERTIFICATES

The certificates issued by the board are issued subject to the provisions of the certificate of incorporation and of the by-laws, and each certificate is subject to revocation in the event that:

(*a*) the issuance of such certificate or its receipt by the physician so certified shall have been contrary to any of the provisions of the certificate of incorporation or by-laws; or

(*b*) the physician so certified shall not have been eligible to receive such certificate, irrespective of whether or not the facts constituting him so ineligible were known to or could have been ascertained by the directors of the Board at the time of the issuance of such certificate; or

(*c*) the physician so certified shall have made any misstatement of fact in his application for such certificate or in any other statement or representation to the Board or its representatives; or

(*d*) the physician so certified shall have been convicted by a court of competent jurisdiction of a felony or of any misdemeanor involving, in the opinion of the Board of Directors, moral turpitude in connection with his practice of medicine; or

(*e*) the physician so certified shall have had his license to practice medicine revoked or shall have been disciplined or censored as a physician by any court or other body having proper jurisdiction and authority.

INSTRUCTIONS TO APPLICANTS

Fill out application blank in detail.

Enclose fee of $35. (Make checks payable to the American Board of Dermatology and Syphilology, Inc.)

Include photographs as directed on application blank.

Enclose reprint of each published paper, if possible.

Send completed applications and above items to the secretary.

Please indicate under No. 13 on the application blank as complete data as possible about your training in dermatology and syphilis. Indicate the month and year, if possible, or at least the number of months of the various parts of your training and also whether full time or part time. If part time indicate whether one-half day, six days a week or three days a week, etc. If dispensary service is considered as part of your training, please indicate details here as well as under No. 14.

In No. 16 indicate clearly when you limited your practice to dermatology and syphilis.

If your training and your practice overlap, please explain under No. 19.

PUBLICATIONS OF THE BOARD

1. Booklet of Information.

2. Opportunities for Graduate and Postgraduate Students in Dermatology and Syphilology, containing a list of places where instruction may be obtained, and details about these places.

3. Syllabus of graduate training.

(*a*) To inform the student physician, intending to specialize, of the field to be covered in his preparation and the methods by which it can be accomplished.

(*b*) To aid the medical schools and the dermatological departments of medical schools and hospitals by outlining the scope of teaching required for specialization in dermatology and syphilology.

Further information may be obtained from the secretary-treasurer.

AMERICAN BOARD OF INTERNAL MEDICINE, Inc.

ERNEST E. IRONS, Chairman, Chicago.
REGINALD FITZ, Vice Chairman, Boston.
WILLIAM S. MIDDLETON, Secretary-Treasurer, 1301 University Avenue, Madison, Wis.
DAVID P. BARR, St. Louis.
LOUIS HAMMAN, Baltimore.
WILLIAM J. KERR, San Francisco.
JONATHAN F. MEAKINS, Montreal, Quebec.
JOHN H. MUSSER, New Orleans.
G. GILL RICHARDS, Salt Lake City.

". . . the membership of the board shall be maintained at the ratio of five members from the American College of Physicians and four members from the Section on the Practice of Medicine of the American Medical Association and that at least three of the members of the board from the American College of Physicians and two members of the board from the Section on the Practice of Medicine of the American Medical Association shall be of professorial rank in approved medical schools of the United States or Canada."

"Sec. 5, Art. 5, Articles of Incorporation."

"The term of office of members of the board succeeding the original board members shall be three years and until their successors are elected and qualified, and no such member shall serve more than two consecutive three year terms."

"Sec. 7, Art. 5, Articles of Incorporation."

PURPOSE AND OBJECTIVE

The purpose and objective of the board is the certification of specialists in the field of internal medicine, and the establishment of qualifications for such certification and of the procedure necessary for the accomplishment of such objective.

While the board is at present concerned chiefly with the qualification and procedure for certification in the general field of internal medicine, it is intended to inaugurate, as soon as practicable similar qualification and procedure for additional certification in certain of the more restricted and specialized branches of internal medicine, as gastro-enterology, cardiology, metabolic diseases, tuberculosis, allergic diseases, et cetera. Such special certification will be considered only for candidates who have passed the written examination required for certification in general internal medicine. The operation of such a plan will require the active cooperation and participation of recognized representatives from each of such special fields of medicine.

VALUE OF CERTIFICATION

1. An attest of special training and qualification for the practice of internal medicine as a specialty.

2. Publication with internists proper designation in a special registry of certified specialists and in the American Medical Directory.

QUALIFICATIONS OF CANDIDATES

Each applicant for admission to the examination shall be required to present evidence that he has met the following standards:

1. GENERAL.

A. Satisfactory moral and ethical standing in the profession.

B. Membership in the American Medical Association or, by courtesy, membership in such Canadian or other medical society or societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association. Except as here provided, membership in other societies shall not be required.

2. PROFESSIONAL.

A. Graduation from a medical school of the United States or Canada approved by the Council on Medical Education and Hospitals of the American Medical Association.

B. Completion of an internship of not less than one year in a hospital approved by the same council.

C. In the case of an applicant whose training has been received outside of the United States and Canada, his credentials must be satisfactory to the aforenamed council, the Advisory Board for Medical Specialties, and the National Board of Medical Examiners.

3. SPECIAL TRAINING.

A minimum of five years must elapse after completion of a year of internship in a hospital approved for intern training before the candidate is eligible for admission to an examination.

A. Three years of this period must be devoted to special training in internal medicine. This requirement should indicate a period of at least several months of graduate work under proper supervision in anatomy, physiology, biochemistry, pathology, bacteriology or pharmacology, particularly as related to the practice of internal medicine. This work may be carried on in any domestic or foreign medical school or laboratory recognized by the Council on Medical Education and Hospitals of the American Medical Association as offering appropriate facilities for this type of postgraduate training; or it may include a period of at least several months of graduate work under proper supervision in internal medicine or in its restricted and specialized branches in any domestic or foreign hospital, clinic or dispensary, or under the immediate preceptorship of an internist recognized by the above council as offering appropriate facilities for this type of postgraduate experience.

B. A period of not less than two years of special practice in the field of internal medicine or in its more restricted and specialized branches.

MEMORANDUM FOR THE GUIDANCE OF CANDIDATES

The American Board of Internal Medicine does not propose to establish fixed rules for the preliminary training of candidates for certification in this field. Broad general principles for training, however, may be outlined, although such suggestions as are made must of necessity be subject to constant changes reflecting the dynamic nature of the specialty.

1. A sound knowledge of physiology, biochemistry, pharmacology, anatomy, bacteriology and pathology in so far as they apply to disease is essential for continued progress of the individual who practices internal medicine. Such knowledge may be obtained in a number of ways:

A. By properly arranged and supervised graduate courses;

B. By the opportunities for study afforded by the appointment to a junior position in a department of physiology, biochemistry, pathology, etc. (see above) with attendance upon advanced lectures in the other subjects;

C. By advanced study in these subjects while an intern or resident medical officer, and by the application of the principles involved to patients under one's control;

D. By the detailed study, under supervision, of a problem or topic in medicine in which the student brings the basic facts of physiology, pathology, etc., into direct relation with the concrete clinical problem. The analysis of a problem with detailed knowledge of its fundamental pathologic or physiologic background does much to stimulate thoroughness, clear thinking and progress.

2. A portion of the written examination is designed to test the candidate's knowledge in these "preclinical" subjects and especially in their application to disease rather than their purely laboratory aspects.

3. The mere factual knowledge of medicine and its basic sciences is not sufficient. The candidate must have had training in their use in furthering his understanding in clinical medicine. This implies practical experience under the guidance of older men who bring to their clinical problems ripe knowl-

edge and critical judgment. Preparation to meet this requirement adequately may be even more difficult to obtain than the so-called scientific training. It may, however, be acquired in the following ways:

A. By work in a well organized hospital outdoor clinic conducted by competent physicians;

B. By a prolonged period of resident hospital appointments likewise directed by skilled physicians;

C. By a period of training in intimate association with a well trained and critical physician who takes the trouble to teach and guide his assistant rather than to expect him only to carry out the minor drudgery of a busy practice.

4. The board does not consider it to the best interests of internal medicine in this country that rigid rules be formulated as to where or how the training outlined above is to be obtained. Medical teaching and knowledge are international. The opportunities of all prospective candidates are not the same. Some may have the opportunity of widening their knowledge by a period of study abroad. Others, at the other extreme, may be restricted to a comparatively narrow geographic area and their more detailed training must be obtained in short periods of good study scattered over a longer time. Although it is required that at least five years must elapse between the termination of the first intern year and the date when the candidate is eligible to take the examination, a longer period is advisable. The board wishes to emphasize that time and training are but a means to the end of acquiring a broadness and depth of knowledge of internal medicine which the candidate must demonstrate to the board in order to justify it in certifying that he is competent to practice internal medicine as a specialty. The responsibility of acquiring the knowledge as best he may rests with the candidate, while the responsibility of maintaining the standard of knowledge required for certification devolves on the board.

METHOD OF EXAMINATION

The examination required of candidates for certification as specialists in internal medicine will comprise Part I (written), and Part II (practical or clinical).

Part I. The written examination is to be held simultaneously in different sections of the United States and Canada on the third Monday of February and October of each year. This examination will be divided into a morning and an afternoon session of three hours each, and the two sessions A and B will include the following:

A. Question in applied physiology, anatomy, physiological chemistry, pathology, bacteriology and pharmacology as related to internal medicine as well as the cultural aspects of medicine.

B. Questions in general internal medicine.

Part II. Candidates successful in the written tests will be eligible for the practical or clinical examination, which will be conducted by the members of the board near the time and place of the annual meeting of the American College of Physicians and of the American Medical Association. This examination is conducted at the bed side, and each candidate will be assigned one or more patients in the hospital. A written record of the clinical history and examination is required which forms the basis of the oral conference conducted by one or more examiner.

APPLICATION

Candidates for examination shall make their application on a prescribed form which may be obtained from the office of the secretary-treasurer.

The application shall contain a record of the candidate's premedical and medical training as well as of internships, graduate study, hospital or dispensary staff appointments, teaching positions, membership in medical societies, medical papers published and the names of two well known internists to whom the board may refer for professional and character reference.

The application shall also be accompanied by two recent, unmounted, signed photographs of the candidate and the registration and examination fee of $40, which fee will cover both the written and practical examinations. The registration fee of $10 is not refundable. An additional fee of $10 will be required when the certificate is issued.

CERTIFICATES

The certificate issued by the American Board of Internal Medicine shall be in such form as to comply with the articles of incorporation and the by-laws and shall be signed by the officers and members of the board, and shall bear the official seal of the board.

Certificates of the board will be issued to candidates who have satisfactorily completed the written and practical examinations, and been found qualified by the board to practice the specialty of internal medicine.

REVOCATION OF CERTIFICATES

The American Board of Internal Medicine shall have the sole power, jurisdiction and right to determine and decide whether or not the evidence or information placed before it is sufficient to constitute grounds for revocation of any certificate issued by this board, and the decision of the board in the premises shall be final.

All official correspondence should be addressed to the secretary-treasurer.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, Inc.

WALTER T. DANNREUTHER, President, New York.
JOSEPH L. BAER, Vice President, Chicago.
LOUIS E. PHANEUF, Vice President, Boston.
PAUL TITUS, Secretary-Treasurer, 121 South Highland Avenue, Pittsburgh.
E. A., SCHUMANN, Member of Executive Committee, Philadelphia.
JENNINGS C. LITZENBERG, Minneapolis.
G. D. ROYSTON, St. Louis.
R. D. MUSSEY, Rochester, Minn.
L. A. EMGE, San Francisco.

ORGANIZATION

In 1930 the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, the American Gynecological Society, and the Section on Obstetrics, Gynecology, and Abdominal Surgery of the American Medical Association, each elected three Fellows to constitute the American Board of Obstetrics and Gynecology.

Dr. Walter T. Dannreuther of New York, Dr. Paul Titus of Pittsburgh and Dr. Grandison D. Royston of St. Louis were appointed to represent the American Association of Obstetricians, Gynecologists, and Abdominal Surgeons; Dr. Jennings C. Litzenberg of Minneapolis, Dr. Joseph L. Baer of Chicago, and Dr. E. A. Schumann of Philadelphia were appointed to represent the American Gynecological Society; Dr. Fred L. Adair of Chicago, Dr. R. D. Mussey of Rochester, Minn., and Dr. E. D. Plass of Iowa City, Iowa, were appointed to represent the Section on Obstetrics and Gynecology of the American Medical Association. Dr. Adair and Dr. Plass were succeeded following their recent resignations by Dr. L. E. Phaneuf of Boston and Dr. L. A. Emge of San Francisco.

The board was incorporated and organized and held its first meeting in September 1930. At that time the By-Laws were adopted and provision was made by resolutions for its proper functioning.

This board had been in the process of organization since 1927 and put into action a determined effort on the part of these three national organizations to improve the standards of practice of obstetrics and gynecology.

Experienced practitioners of the specialty are required to undergo a practical clinical examination, whereas a younger group has both a written and clinical examination and must also submit records of a group of cases in order to qualify for certification.

After 1941, no such distinction will be made, and all applicants will be obliged to fulfill all of the requirements, including the written examination in obstetrics and gynecology and to submit case records, as well as the general oral-clinical and pathological examination in obstetrics and gynecology.

PURPOSES

First. To elevate the standards and advance the cause of obstetrics and gynecology.

Second. To determine the competence of specialists in obstetrics and gynecology.

Third. To grant and issue certificates, or other evidence of special knowledge in the field of obstetrics and gynecology, to voluntary applicants and candidates therefor.

Fourth. To arrange, control, and conduct examinations to test the qualifications of voluntary candidates.

Fifth. To serve the public, hospitals and the medical schools by preparing lists of practitioners who shall have been certified by the board. These activities proceed from the certificate of incorporation in which it is stated that "the nature of the business and the objects or purposes proposed to be transacted, promoted and carried on by it" are as follows:

"To encourage the study, improve the practice, and advance the cause of obstetrics and gynecology, subjects which should be inseparably interwoven; and to grant and to issue to physicians duly licensed by law, certificates or other equivalent recognition of special knowledge in obstetrics and gynecology."

NO DEGREES OR LEGAL RESTRICTIONS

Each certificate granted or issued does not of itself confer or purport to confer upon any person any degree or legal qualifications, privileges or license to practice obstetrics or gynecology, nor does the board intend in any way to interfere with or limit the professional activities of any duly licensed physician. Its chief aim is to standardize qualification for specialists in obstetrics and gynecology, and to certify as specialists those who voluntarily comply with the board's requirements.

VALUE OF CERTIFICATE

The national obstetrical and gynecological organizations, which have participated in the formation of the board and are sponsoring its activities, as well as other societies, attach considerable importance to its certificate. Both the medical and the lay public, including hospital directors, have come to utilize the certificate from this board as a means of determining who are well grounded as specialists in obstetrics and gynecology.

Lists of those holding certificates from this board who are limiting their practice to obstetrics and gynecology are published and issued from time to time by the board; similar lists are published by the *American Journal of Obstetrics and Gynecology*, and also appear in the *American Medical Directory*. This latter indicates diplomates of this and other boards by means of numerical symbols appearing in the biographic records. This directory, however, does not give such special recognition to diplomates who fail to maintain membership in the American Medical Association, or the Canadian or other medical societies recognized for this purpose.

A joint directory of specialists certified by the thirteen major and two affiliate special boards was published in 1940.

This board holds active membership in the Advisory Board for Medical Specialties.

This board, in cooperation with the Council on Medical Education and Hospitals of the American Medical Association, is conducting a survey of institutions providing acceptable residencies and internships in obstetrics and gynecology.

Applicants sign an agreement empowering the board to revoke their certificates and to remove their names from its lists, if they fail to abide by the regulations governing limitation of practice to the specialty or otherwise violate the standards of ethical practice.

For emphasis it is repeated that the board does not intend to, and cannot, in any way interfere with or limit the professional activities of any duly licensed physician, but its aim is toward adequate qualifications for those who claim to be specialists in obstetrics and gynecology.

ELIGIBILITY REQUIREMENTS

Requirements for Applicants. Each applicant, before he shall become eligible to receive such certificate or other evidence of recognition, (*a*) must establish in a manner satisfactory to the board of directors that he is a physician duly licensed by law to practice medicine, that he is of high ethical and professional standing, and that he has received adequate training in obstetrics and gynecology as a specialty; (*b*) must have had conferred upon him a degree in medicine by an institution of learning approved by the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association; (*c*) must make application to the examiners whose duty it shall be to investigate the applicant's credentials and make a survey of his character; (*d*) must assure the board that he is limiting his practice to obstetrics and/or gynecology and that he intends to continue to do so, and (*e*) should have membership in the American Medical Association, or membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association.

Each candidate should have certain fundamental knowledge of the basic essentials of anatomy, pathology, bacteriology, physiology, pharmacology, and therapeutics as related to the practice of obstetrics and gynecology. Clinical training should consist, subsequent to graduation, of at least one year's general rotating internship, and thereafter a special residency in obstetrics and gynecology for a period of at least three years, not necessarily consecutive. The board accepts the fifth or "intern" medical school year required at some schools in lieu of the usual fifth or intern "clinical training" year following graduation. As a substitute for special training, service with a qualified preceptor, preferably one who has been certified by the board, may be acceptable. The exact time basis for this has not been specified, and each case will be reviewed and decided separately by the credentials committee. The time for this type of training will vary with the amount of work done with the preceptor. At least a fundamental knowledge of both obstetrics and gynecology is essential regardless of whether a candidate's practice is limited to one or the other branch. As heretofore, all candidates will be required to stand examination in both branches of the specialty, regardless of the fact that the major part of their practice may be in one or the other branch of the specialty.

This board deprecates the practice of obstetricians and gynecologists engaging in other fields of practice than that in which they profess to be specialists. The board does not exclude from examination, however, obstetricians or gynecologists who practice abdominal surgery and urology in the female, as well as breast surgery, because of the correlation of these activities. The board has ruled that physicians who accept male patients in their private or other practice, for operative or other care, cannot be regarded as specialists in obstetrics and gynecology. Special certifying boards in general surgery and internal medicine have now been organized and such individuals should apply to these boards for certification.

Application must be on a special blank which may be procured from the secretary and forwarded with the other required credentials and the application fee. Applications must be in the office of the secretary at least ninety days prior to the date of examination.

CLASSIFICATION OF APPLICANTS

Until Jan. 1, 1942, applicants for such certificates or other recognition shall be classified by the credentials committee as follows:

Group A. Those who have limited their practice to obstetrics and/or gynecology for a period of ten years or more, having had adequate special training following a one year general internship.

Applicants who have qualified under group A shall be required to undergo and pass a practical, oral, clinical and laboratory examination, including obstetrical and gynecological pathology. The board of directors may grant and issue a certificate or other evidence of recognition to each such applicant who shall have passed such examination in a manner and with a grade satisfactory to the board of directors, and who shall have met all other requirements therefor as hereinabove provided. (After 1941 case records and written examinations will also be required as at present for group B.) As heretofore, all candidates will be required to stand examination in both branches of the specialty, regardless of the fact that the major part of their practice may be in one or the other branch of the specialty.

Group B. Those who have had: (1) at least one year of intern service in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association, (2) five years or more practice thereafter, including at least three years of special training in obstetrics and/or gynecology satisfactory to the board of directors, and (3) who are now limiting their practice to obstetrics and/or gynecology. Opportunity for personal responsibility during this period of training is highly desirable.

Applicants who have qualified under group B shall be required to take and pass a written clinical and laboratory examination in obstetrics and gynecology, including obstetrical and gynecological pathology, as well as an oral, practical examination. Each candidate shall submit 50 typewritten case reports of major pathological obstetrical and/or gynecological cases with or without operative procedures. After Jan. 1, 1942, case records must be of patients treated within four (4) years of the date of the candidate's application. The number of residency cases submitted should not be more than half (25) of the total number of fifty (50) cases required. Candidates must attain a passing grade in both the written examination and case histories before becoming eligible for the oral, clinical, and pathological part of the examination. The board of directors may grant and issue a certificate to each such candidate who shall have passed such examination and who shall have submitted reports on such cases in a manner and with a grade satisfactory to the board of directors, and who shall have met all other requirements as hereinabove specified.

Effective Jan. 1, 1942, the requirements for all candidates will be changed to be as follows: Those who have had: (1) at least one year of intern service in a hospital approved by the Council on Medical Education and Hospitals of the A. M. A., (2) a minimum of seven years of practice thereafter, including at least three years of special training in obstetrics and/or gynecology satisfactory to the board of directors, and (3) who are now limiting their practice to obstetrics and/or gynecology. Opportunity for personal responsibility during their period of training is highly desirable.

APPLICATION BLANK AND FEES

Application must be made on a special blank which may be procured from the secretary and forwarded with the other required credentials and the application fee. The secretary cannot make any eligibility rulings. These are made only by the credentials committee after reviewing the candidate's formal application, which must be completely filled out and previously filed with the secretary. Applications cannot be considered for classification and action by the credentials committee unless accompanied by an application fee of $15, which is not returnable.

The examination fee for candidates is $85, payable when the candidate is notified of his acceptance for examination. This examination fee shall not be returnable after the candidate has been officially accepted by the credentials committee and notified to report for examination. If a candidate fails in his examination he will be admitted to a second examination after one year but within three years without additional fees. After two failures an applicant must file a new application and pay fees, as above, before the third examination.

Applicants declared ineligible for admission to examination may reopen their applications within one year of its filing date without payment of an additional application fee.

Applications and application fees must be in the office of the secretary at least ninety days prior to the scheduled date of the examinations.

The fees, totaling $100, have been carefully computed on a basis of cost of examinations and are used entirely for administrative expenses. Examiners serve without compensation other than actual expenses.

Applicants who fail to exercise the examination privilege within three years of the date of filing the application are required to file a new application and pay a new application fee.

EXAMINATIONS

Written examinations are held simultaneously once yearly in various cities of this country and Canada. Arrangements will be made for candidates to report in any convenient city where there may be a diplomate of this board to conduct or supervise the written examination sent out under sealed cover from the board's office. Case histories must be submitted to the local examiner at the same time.

The written examination and submission of case histories is scheduled for the first Saturday of January. Application on an official application form for admission to this examination must be filed in the office of the secretary at least ninety days prior to this date. Grades cannot be mailed from the secretary's office until about March 15.

Part I of the examination must be taken by all applicants classified in group B, but not by those in group A until 1942.

Part I consists of a comprehensive written examination and the filing of fifty case histories. Only one group B, Part I, examination will be held yearly. No group B candidate is eligible for the oral and pathological examinations until he has passed the written portion and his case histories have been found satisfactory. The passing grade for the written examination and case records is 75 per cent, and a candidate whose grade in either or both falls below 75 per cent is conditioned. Either or both of these conditions must be removed before the candidate is eligible for Part II. Reexamination for the removal of conditions in Part I may be taken at any regular examination after one year but within three years without payment of an additional fee. Candidates who successfully complete the Part I examinations proceed automatically to the Part II examinations held later in the year.

The written examination consists of questions on both obstetrics and gynecology, as evidence of a fundamental knowledge of both branches is required of all candidates. The fifty case records of each group B candidate must be presented with his examination paper to the local examiner. Both the written examination papers and typewritten case records will be reviewed by an examiner located in a remote district from that of the candidate.

Part II. The general oral-clinical and pathological examinations given all candidates will be conducted by the entire board at or near the time and place of the annual meeting of one or more of the national societies represented on this board, usually that of the American Medical Association. Applications must be filed at least ninety days prior to the date of examination. This examination is given to all applicants in group A and group B. The candidates will be expected to identify and discuss several obstetrical and gynecological pathologic specimens and histologic sections. As heretofore, all candidates will be required to stand examination in both branches of the specialty, regardless of the fact that the major part of their practice may be in one or the other branch of the specialty. An endeavor will be made to adapt the details of the oral examination to each candidate's experience and practice, and will be particularly directed to ascertain his familiarity with recent obstetrical and gynecological literature, the breadth of his clinical experience, and his general qualifications as a specialist in obstetrics and gynecology.

Examiners report orally upon each candidate to the assembled board, after which the results of their examinations are considered jointly. After a general consideration of the details of the candidate's oral and pathological examination, including a review of his capability and general adaptability, the candidate is passed or failed by the entire board. No conditions are given in Part II of the examination. When a candidate fails in Part II of the examination, he is not required to repeat Part I, but to take a reexamination in the oral, clinical, and pathological portions only. Reexamination may be taken within three years of the original examination or first failure.

After 1941, the distinction between candidates in group A and group B will be abolished. After that time new rulings similar to those now pertaining to group B will apply to all applicants, and every candidate will be required to undergo the written examinations and present case records (Part I), as well as the oral-clinical and pathological examinations (Part II) in both obstetrics and gynecology.

CASE RECORDS

(After January 1, 1942, case records submitted must be of applicants treated within four (4) years of the date of the candidate's application. The number of residency cases submitted should not be more than half (25) of the total number of fifty (50) cases required.)

Case histories need not be copied verbatim from the hospital records but must be sufficiently complete so that the examiner can determine the diagnosis of existing conditions and evaluate the judgment of the candidate in his choice of procedure. Each history must give the hospital number and name of the hospital at which the patient was treated or operated upon, together with all pertinent dates. Histories must be typewritten on standard size paper, 8½ x 11 inches, assembled by individual cases, and submitted without any form of binding other than light weight paper folders. The following data should be as complete as possible: essential points in history and examination; the clinical diagnosis and in operative cases preoperative diagnosis, ample summary of operative procedure; clinical and pathological diagnosis; summary of postoperative course with special reference to morbidity; findings at time of discharge from hospital and at six months "follow-up."

In both obstetrical and gynecological case histories not more than ten major selected nonoperative cases may be included. When pathological tissue is removed, adequate gross and microscopic descriptions are required. The candidate and the pathologist are required to employ the accepted nomenclature in the classification of gross and microscopic reports of pathological findings.

The obstetrical case records should show the date of the first prenatal visit and any special features bearing on the case. The examination of obstetric patients should include a routine serologic test for syphilis; also blood grouping or typing should be noted on histories of patients requiring transfusions. The weight and condition of the child at birth and at the time of discharge from the hospital should be shown on the obstetric history.

A final statement must be prepared for each case, to include an account of the candidate's personal observations of the case both prior to and subsequent to operation. These data must include (1) the basis for the diagnosis, (2) the facts that determined the course of the treatment, and (3) critical conclusions to be drawn from the outcome of the case. Case reports which do not include such discussion and comments will not be reviewed by the examiners. Obstetrical histories which omit measurements of the pelvic inlet and outlet will be considered incomplete.

The group of histories must include a variety of material rather than a number of cases of one type. The histories should be sufficiently detailed so that the examining board, after a careful reading of the records will be able to answer the following questions:

1. Is the diagnosis warranted by the recorded data?
2. If not, how lacking?
3. Are the indications for operation clearly stated?
4. Is the technic satisfactorily described?
5. Do the results justify the procedure?
6. Do the conclusions drawn indicate a grasp of the subject?

Only those records which carry the candidate's personal deductions, conclusions, and comments will be credited toward

the fifty, and these records must be diversified. Case records which do not conform to board regulations will not be graded.

Note: Two complete index lists of these cases must accompany the records. Separate lists should be made for each individual hospital at which operations were performed. These lists must state the candidate's name, and at the head of each page the name and address of the hospital, the name of the patient, admission number, date of admission, date of operation, and date of discharge. The candidate must have these lists verified by the librarian, or preferably the superintendent, of each individual hospital from which these case records come. All verifications must be formally signed by the responsible hospital official.

Case histories are to be presented with the complete examination paper to the examiner conducting the written examination. They are not to be sent by the candidate to the secretary.

The final action of the board is based upon the candidate's professional record, training and attainments, as well as on the results of his formal examination.

Communications should be addressed to the secretary-treasurer.

AMERICAN BOARD OF OPHTHALMOLOGY

CONRAD BERENS, Chairman, New York.
WILLIAM L. BENEDICT, Vice Chairman, Rochester, Minn.
JOHN GREEN, Secretary-Treasurer, 6830 Waterman Avenue, St. Louis.
DANIEL B. KIRBY, Assistant Secretary, New York.
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EDWARD C. ELLETT, Memphis, Tenn.
GRADY E. CLAY, Atlanta, Ga.
FREDRICK C. CORDES, San Francisco.

ORIGIN, AIMS AND METHODS

In 1913 the American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, and the American Academy of Ophthalmology and Otolaryngology appointed committees to report on ophthalmic education.

In 1914 these committees recommended that medical schools of the first class establish graduate courses in ophthalmology leading to an appropriate degree, and that these courses should represent not less than two years of systematic work subsequent to taking the degree of Doctor of Medicine. There was unanimous agreement as to the need of systematized and standardized training of those who are to practice ophthalmology, but it was clear that, in the near future, the number who would take the complete course leading to such a degree would be small. Moreover, such a course would not solve the problem of differentiating, in some degree, between the competent and the incompetent among those now in practice in ophthalmology. The committees were continued and, in 1915, they made further recommendations, as a result of which a joint board was created consisting of three representatives from each of the three special societies.

In 1916, after much preliminary work, this board was organized as the American Board for Ophthalmic Examinations (later changed to "American Board of Ophthalmology"). It was incorporated May 3, 1917.

In 1934 the plan of organization was changed so that each component society elects four members, instead of three, to form the board. The members of this board are chosen in the same manner as the presiding officers of these societies are chosen. One is elected each year by each of the societies represented on the board, to serve for four years.

As other specialties formed boards similar to the American Board of Ophthalmology the need for some supervising and coordinating control led to action by the American Medical Association in 1933 authorizing the Council on Medical Education and Hospitals: (1) to formulate standards of administration, based on those of the American Board of Ophthalmology, of Otolaryngology, of Gynecology and Obstetrics, and of Dermatology and Syphilology; and (2) to recognize officially new boards meeting these standards.

The Constitution of the Advisory Board for Medical Specialties which was organized in 1934 states that: "This board shall act in an advisory capacity to such organizations as may seek its advice concerning the coordination of the education and certification of medical specialists."

CHIEF FUNCTIONS

1. To establish standards of fitness to practice ophthalmology cooperating with hospitals and graduate schools of medicine.

2. To arrange and conduct examinations to test the qualifications of those who practice ophthalmology, and to confer certificates upon those who meet the standards established by the Board.

3. To act as preceptors for prospective students of ophthalmology.

NO DEGREES

The conferring of a degree is left to the universities, where it belongs, and the board makes no attempt to control the practice of ophthalmology by any license or legal regulation whatever. It simply aims to establish a standard of fitness to practice ophthalmology, and to certificate any who, voluntarily, apply and satisfy the board of their qualifications.

The following is the wording of the present certificate:

The American Board of Ophthalmology hereby certifies that .....*(name)*..... has pursued an accepted course of graduate study and clinical work, and has successfully passed the examination in ophthalmology conducted under the authority of this Board.

Date.....

Signatures of members of the Board

Many special eye hospitals as well as general hospitals in all parts of the country require the certificate for appointment or promotion on their staffs. In addition, many societies now require the certificate as a prerequisite for membership.

The number of institutions and societies which require the certificate of the board is increasing.

The American College of Surgeons recognizes the certificate of this board as evidence of academic fitness in ophthalmology. It requires from candidates for its Fellowship who hold such certificates only half as many case histories as from those who are not so certificated.

Up to Jan. 1, 1940, approximately 1,700 ophthalmologists have received the certificate of the board.

FEES

The fee for the examination and the certificate of the American Board of Ophthalmology is $50. Of this sum $25, which is not returnable, must accompany the application. The balance of $25 must be paid when the certificate is ready for issuance.

If a candidate fails in the written examination, he may be admitted to a second examination within three years, for which there will be an additional fee of $10.

Applications expire three years from date of application. If a candidate has not appeared for examination before expiration of his application, he will be required to apply again and pay an additional application fee of $25.

The fees of candidates are used solely for defraying the actual expenses of the board. The members of the board and their associates receive no emoluments.

GENERAL REQUIREMENTS FOR ALL CANDIDATES

1. Application on special blank, which may be obtained from the secretary, must be filled out accurately. Letters of endorsement from two well known physicians (preferably ophthalmologists) together with any other required credentials must accompany the application and must be sent to the secretary at least ninety days before the candidate expects to appear before the board.

2. The candidate must have high ethical and professional standing in his community.

3. Membership in the American Medical Association or such other societies as are recognized for the purpose by the Council on Medical Education and Hospitals of the American Medical Association. In the case of an applicant whose training has been received outside of the United States and Canada, his credentials must be satisfactory to the Board; if he has been in practice less than ten years he should obtain the certificate of the National Board of Medical Examiners.

4. A list of papers or books published by the candidate must be submitted.

5. Reports of ten cases of varied character which have been observed and treated by the applicant are required.

6. An examination divided into Part I (written) and Part II (clinical, practical and laboratory). In both of these examinations a knowledge of the practical application of the basic sciences of ophthalmology will be required.

7. Citizenship in country where candidate practices.

The final action of the board is based on the candidate's professional record, training and attainments as well as on the results of his formal examinations.

GENERAL EDUCATIONAL REQUIREMENTS

(Applicable as far as possible after 1942)

1. A degree from a medical school of high standing satisfactory to the board and approved by the Council on Medical Education and Hospitals of the American Medical Association. In the case of an applicant whose training has been received outside of the United States and Canada, his credentials must be satisfactory to the board. He may be required to obtain the certificate of the National Board of Medical Examiners.

2. Completion of an internship of not less than one year in a hospital approved by the same Council.

SPECIAL TRAINING

(Applicable as far as possible after 1942)

A period of combined study, training and practice of not less than three years in approved medical schools, hospitals, clinics, dispensaries, laboratories, perceptorships and private practice.

(A total of five years will be required of candidates practicing eye, ear, nose and throat.)

1. This shall include graduate study of the basic medical sciences which are fundamental to the intelligent practice of ophthalmology, particularly: anatomy, histology, embryology, optics, physiologic optics, visual physiology and psychology, pathology, bacteriology, pharmacology. Mere factual knowledge of these subjects is not sufficient. The candidate must have had training in their application and in their use in clinical ophthalmology, especially in refraction, disorders of motility and binocular vision, perimetry, and in the skilful adjustment and use of instruments such as the ophthalmoloscope, retinoscope, slit lamp and microscope.

2. Active clinical experience in approved hospitals, clinics, dispensaries and private practice. Library and laboratory facilities should be utilized for the intensive study of cases.

The subject matter to be covered under 1 and 2 is outlined in the syllabus prepared by the board.

These requirements may be met in various ways:

BASIC STUDIES

A—By courses in approved graduate medical schools.

B—By the opportunities for study afforded by the appointment to a junior position in one of the departments with attendance at advanced lectures in the other subjects.

C—By advanced study of these subjects while a resident and by application of the principles involved to patients under one's control.

D—By the detailed study, under supervision or as assistant to an experienced research worker, of some problem or topic which brings the basic facts of physiology, pathology, etc., into direct relation with the concrete clinical problem. The analysis of a problem with detailed knowledge of its fundamental physiologic and pathologic background does much to stimulate thoroughness, clear thinking and progress.

CLINICAL EXPERIENCE

A—By residency in an approved hospital. The most desirable of these residencies have regular lectures covering the whole field of clinical ophthalmology and of the basic subjects as applied in clinical practice. Many of these have seminars at which residents report cases which they have carefully worked up. These are discussed by the other residents and by the staff and the method of presentation as well as the subject matter critically considered.

B—There are many residencies, usually of 12 months, which do not furnish regular instruction by lectures and quizzes and seminars. If he has access to a good library and laboratory, the student can learn a great deal and has some advantages over the man who expects to be "spoon-fed." The syallbus prepared by the board will guide him in his selection of topics to be studied.

C—There are some opportunities to continue the study and experience by securing appointments as fellows.

D—By a period of training in association with a well trained and critical ophthalmologist who takes the trouble to teach and guide his assistant.

E—After completing a residency it is of great advantage to secure a position in a clinic as fellow or assistant. This may require only part time work, but due credit will be given. Its value to the student depends on how much study he puts into it and on how competent his seniors are.

F—Research under competent critical and sympathetic supervision will give first hand insight into (1) the methods whereby old knowledge was and new knowledge is acquired, and (2) the pitfalls which accompany attempts to enlarge the sphere of knowledge. Only in this way can the candidate evaluate facts of the past and present in the intelligent critical way which is expected of the specialist.

The candidate who cannot secure the type of residency he desires should not despair, for his progress depends far more on how he uses his opportunities than on the opportunities themselves.

WHAT CONSTITUTES THE EXAMINATION

In determining the question of certification, the examiners rely on the following criteria:

1. The applicant's professional record;
2. The applicant's case reports;
3. A written examination;
4. A practical clinical and laboratory examination.

CASE REPORTS

Detailed instructions for the preparation of case reports should be obtained from the secretary.

WRITTEN EXAMINATION: PART I

The written examination may be given simultaneously in as many cities as the board may determine suitable for the purpose. A candidate, to be eligible for Part I, must meet all general requirements. Arrangements will be made for candidates to report in a convenient city where there may be a board member, or an associate member, to conduct and supervise the written examination.

These examinations will not be given at the time of the oral and clinical examination or board sessions but will be held at least sixty days before such examinations simultaneously in different parts of the country at places reasonably convenient to candidates.

No candidates shall be eligible for the practical examination until he has passed the written examination and his case reports have been found satisfactory. In the event of failure in either or both of these preliminary tests, a candidate is conditioned and the conditions must be removed before the candidate is eligible to appear for the practical (Part II) examination.

The written examination questions will be on all subjects as follows:

External Diseases.	Perimetry and Campimetry
Ophthalmoscopy	Relation of the Eye to General Diseases
Pathology-Histopathology	
Refraction and Retinoscopy	Therapeutics and Operations (including Practical Surgery)
Anatomy and Embryology	
Ocular Motility	Optics and Visual Physiology

Written examination papers will be reviewed by examiners who reside in districts remote from those in which the candidate practices.

PRACTICAL AND CLINICAL EXAMINATION: PART II

The purpose of the examination is to determine the competence of the candidate to practice ophthalmology.

Candidates must be prepared to be examined in the whole field covered by the syllabus of the board. The time spent in preparation will count less than the knowledge and experience acquired as shown on examination.

The subdivisions of the practical examination are as follows:

1. External diseases of the eye, lacrimal passages, etc., including inspection, focal illumination, use of loupe and slit lamp, examination of reactions of the pupil, of tension by tonometer and by fingers.

2. Ophthalmoscopy. Several patients will be examined by the candidate and the findings described or drawn. The ability to see with the ophthalmoscope and to interpret what is seen, and the systematic and thorough methods of examination used by the candidate will count for more than mere statement of diagnosis. A candidate should bring his own ophthalmoscope so that he may not suffer the handicap of an unfamiliar instrument.

3. Pathology. The candidate should be familiar with general clinical pathology as well as the etiology, pathology, and bacteriology of diseases of the eye. He will be asked to examine microscopic slides and to recognize ordinary normal and pathologic histology of the eye and to identify the commoner microorganisms.

4. Refraction. A candidate will examine patients and show mastery of various methods, and of the principles of refraction and of retinoscopy. He should bring his own retinoscope.

5. Ocular Motility. The candidate will demonstrate upon patients his familiarity with routine methods of examination for abnormalities of the ocular muscles.

6. Practical Surgery. A candidate will demonstrate his surgical technic upon animals' eyes. To have the advantage of using instruments with which he is familiar, he should bring his own equipment for performing a regular combined extraction of the lens.

DATES OF PART II EXAMINATION

Examinations will be held annually at or near the time and place of the meeting of the American Medical Association; also at other times and places at the discretion of the board, depending on the number of applications from any region.

Notices of all examinations will be found in The Journal of the American Medical Association, and in the special journals of ophthalmology.

REEXAMINATION

Candidates may be reexamined as often as they desire, provided they give satisfactory evidence of adequate preparation. Six months must elapse between examinations and the board may, at its discretion, deny the candidate the privilege of reexamination.

REVOCATION OF CERTIFICATE

Any certificate issued by the board shall be subject to revocation by the board at any time in case it shall determine in its sole judgment that a candidate, who has received the certificate of the American Board of Ophthalmology, either was not properly qualified to receive it, or has since its receipt become disqualified.

PREPARATORY GROUP

In establishing a preparatory group of prospective candidates for its certificate, the American Board of Ophthalmology plans to assist physicians who wish to study ophthalmology so that they will be acceptable as candidates for examination and certification when they have completed the requirements.

Any graduate or undergraduate of an approved medical school is eligible to make application for membership in this group. Candidates so applying will be notified officially by the secretary when the board has accepted their applications. If accepted, data will be sent concerning ethical and educational requirements. Syllabuses and other information will be made available to them. The board desires to help candidates improve their opportunities so that they will be fully prepared for the examination.

It is essential that candidates conduct themselves in an entirely ethical manner to the end that they bring honor to the profession.

Information and counsel will be available at all times to accepted candidates in this group through advisers who are members or past members of the board.

Members of the preparatory group must keep a summarized record of their activities, two copies of which will be sent to the secretary in January of each year and will be incorporated in the final application for examination and certification.

The fee for application for membership in the preparatory group is $10. This will be deducted from the $50 which is required of every candidate for examination. When the candidate makes application for the examination, he will be required to pay $25, and the balance of $15 must be paid when the certificate is issued. No fees will be refunded.

It is of increasing importance that a physician specializing in diseases of the eye obtain the certificate of the American Board of Ophthalmology. The American Medical Association will especially designate certificated ophthalmologists in future directories. A special directory of all certificated specialists will be published by the Advisory Board for Medical Specialties.

Many national and local ophthalmologic societies demand the certificate of the American Board of Ophthalmology before admission. Promotion in many hospitals cannot be obtained unless the applicant holds the certificate of the board.

For sufficient reason, a person enrolled in this preparatory group may be dropped by vote of the board.

Communications should be addressed to the secretary-treasurer.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY, Inc.

WILLIS C. CAMPBELL, President, Memphis, Tenn.
PHILIP D. WILSON, Vice President, New York.
FREMONT A. CHANDLER, Secretary-Treasurer, 6 North Michigan Avenue, Chicago.
GEORGE E. BENNETT, Baltimore.
FRANK D. DICKSON, Kansas City.
MELVIN S. HENDERSON, Rochester, Minn.
SAMUEL KLEINBERG, New York.
PHILIP LEWIN, Chicago.
JOHN C. WILSON, Los Angeles.

INTRODUCTION

The rapid growth of specialism and the increasing number of physicians limiting themselves in their practice to one branch of medicine or surgery emphasize the need for the proper certification of specialists in the various branches of the medical science. In recognition of this condition the American Board of Orthopaedic Surgery, Inc., aims to elevate the standard of qualifications for the practice of orthopaedic surgery and to certify those surgeons who voluntarily comply with its requirements.

In order to place orthopaedic surgery on the highest possible plane, the American Orthopaedic Association, the Section on Orthopaedic Surgery of the American Medical Association and the American Academy of Orthopaedic Surgeons united in organizing a certifying board which was incorporated in the year 1934 as the American Board of Orthopaedic Surgery, Inc.

The American Board of Orthopaedic Surgery, Inc., has been officially approved by the Advisory Board for Medical Specialties and by the Council on Medical Education and Hospitals of the American Medical Association.

WHAT THE BOARD WILL ACCOMPLISH

1. Certification by the board will establish a criterion to both interested lay and professional groups for judging the qualifications of an orthopaedic surgeon. Thus a reliable guide will be furnished for the choosing of consultants.

2. Hospitals and other organizations will no doubt establish rules limiting service on their permanent staffs to those certified by the board.

3. It will gradually tend to limit the practice of orthopaedic surgery to those properly qualified.

4. Certification by the American Board of Orthopaedic Surgery is one of the essential requirements for membership in the American Orthopaedic Association and the American Academy of Orthopaedic Surgeons.

Excerpts from Articles 1, 2, 7 and 8 of the By-Laws.

Article 1. *Section 1.* DEFINITION. Orthopaedic Surgery is that branch of surgery especially concerned with the preservation and restoration of the functions of the skeletal system, its articulations and associated structures.

Article 2. *Section 2.* PURPOSES. To test and determine the qualifications of applicants for registration and to issue certificates to those found qualified.

Section 3. To prepare and maintain a registry of the holders of the certificates issued by the board.

Section 4. To serve the public, physicians, hospitals and medical schools by furnishing lists of those who have received the certificate of the Board, and thus to assist in protecting the public against irresponsible and unqualified practitioners who profess to specialize in orthopaedic surgery.

Article 7. *Section 1.* APPLICATION FOR CERTIFICATE. Each application for a certificate shall be filed with the secretary upon the prescribed form, and shall be accompanied by the fee which the board may fix from time to time. It shall also be accompanied by an unmounted autographed recent photograph of the applicant and the names of two orthopaedic surgeons acceptable to the board, who may be referred to for information in regard to the applicant.

Section 2. The applicant must have the following qualifications:

(a) He must be a graduate of a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association.

(b) He must be of high ethical and professional standing.

(c) He must be a citizen of the United States or Canada.

(d) He must be duly authorized to practice medicine in the state or province of his residence.

(e) He must be a member of the American Medical Association or another society approved by the Council on Medical Education and Hospitals of the American Medical Association.

(f) He must have had one year of internship in a general hospital acceptable to the board.

(g) After Jan. 1, 1940, he must have had three years of concentrated instruction in orthopaedic surgery approved by and acceptable to the board. (A residency of at least two years on an orthopaedic service of a hospital recognized by the Council of the American Medical Association is desirable.)

(h) He must have knowledge of the basic medical sciences related to orthopaedic surgery.

(i) He must have had at least two years' further experience in the actual practice of orthopaedic surgery. Continuation of training (g) beyond the three years required will not be considered as actual practice unless the position of the candidate is considered permanent or his responsibilities equivalent to those encountered in private practice. This means that interns, residents, fellows, graduate students and assistants will not be

credited with additional periods of training unless they are permanent members of the organizations with which they are associated.

(j) He must have limited his work to the field of orthopaedic surgery for at least two years prior to the submission of his application for examination.

(k) In the case of an applicant whose training has been received outside of the United States and Canada, his credentials must be satisfactory to the Council on Medical Education and Hospitals of the American Medical Association and to the National Board of Medical Examiners. In addition, he must have been engaged in the practice of orthopaedic surgery in the United States (or Canada) for at least three years prior to the submission of his application.

Section 3. Each applicant shall be examined and his qualifications determined by the board in such manner as it may designate, and his record shall be reviewed by the board in the light of all assembled information.

Article 8. *Section 1.* CERTIFICATE. If the applicant be found qualified therefor, a certificate that he has been found by this board qualified to practice orthopaedic surgery shall be issued to him. The certificate shall be in such form as may be adopted by the board, and shall be signed by the officers and members of the board.

EXAMINATION

Examinations will be held once or twice a year. If feasible, these examinations will be in conjunction with meetings of the major orthopaedic societies.

Oral and written examinations will be held on clinical, anatomical and pathological phases of orthopaedic surgery. Anatomical and pathological laboratories and hospital wards will be used when practicable.

APPLICATION FOR CERTIFICATION

Application forms may be obtained from the secretary of the board. These should be filled in accurately and returned not less than ninety days prior to the next examination. An autographed photograph and the fee must accompany the application.

FEES

A fee of $50 must accompany the completed application form. This fee will be returned only in the cases of candidates found ineligible for examination. Address communications to the secretary-treasurer.

Communications should be addressed to the secretary-treasurer.

AMERICAN BOARD OF OTOLARYNGOLOGY

HARRIS P. MOSHER, President, Boston.
BURT R. SHURLY, Vice President, Detroit.
WILLIAM P. WHERRY, Secretary-Treasurer, 107 South 17th St., Omaha.

BOARD OF DIRECTORS

HARRIS P. MOSHER, Boston.
BURT R. SHURLY, Detroit.
WILLIAM P. WHERRY, Omaha.
JOSEPH C. BECK, Chicago.
THOMAS E. CARMODY, Denver.
GEORGE M. COATES, Philadelphia.
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DEAN M. LIERLE, Iowa City.
WILLIAM E. GROVE, Milwaukee.
FRANK R. SPENCER, Boulder, Colo.

ORIGIN, AIMS AND METHODS

SOURCE OF AUTHORITY

In 1916 the American Academy of Ophthalmology and Otolaryngology appointed a committee on examinations, consisting of Drs. Thomas E. Carmody, Harris P. Mosher and Ross Hall Skillern, before whom new members professing otolaryngology as their sovereign work, were to appear to be qualified as such.

In 1924, through the persistent efforts of Dr. George Shambaugh, this activity was enlarged to include representatives from the American Otological Society; the American Laryngological Association; the American Laryngological, Rhinological and Otological Society; the American Academy of Ophthalmology and Otolaryngology; and the Section on Laryngology, Otology and Rhinology of the American Medical Association. Each organization appointed two members, making a total of ten, which constituted the first American Board of Otolaryngology.

Dr. T. H. Halsted of Syracuse, New York, and Dr. H. W. Loeb of St. Louis were appointed to represent the American Otological Society; Dr. H. P. Mosher of Boston and Dr. R. H. Skillern of Philadelphia were appointed to represent the American Laryngological Association; Dr. B. R. Shurly of Detroit and Dr. F. R. Spencer of Boulder, Colorado, to represent the American Laryngological, Rhinological and Otological Society; Dr. T. E. Carmody of Denver and Dr. W. P. Wherry of Omaha to represent the American Academy of Ophthalmology and Otolaryngology; and, Dr J. C. Beck of Chicago and Dr. R. C. Lynch of New Orleans to represent the Section on Laryngology, Otology and Rhinology of the American Medical Association.

CHIEF ACTIVITIES OF THE BOARD

First. To establish standards of fitness to practice otolaryngology.

Second. To arrange, control and conduct examinations to test the qualifications of those who desire to practice otolaryngology and to confer a certificate on those who meet the established standards.

These activities proceed from the object of the corporation which is stated in the Articles of Incorporation to be:

"The object of the corporation shall be to elevate the standard of otolaryngology, to familiarize the public with its aims and ideals, to protect the public against irresponsible and unqualified practitioners, to receive applications for examination in otolaryngology, to conduct examinations of applicants, to issue certificates of qualification in otolaryngology and to perform such duties as will advance the cause of otolaryngology."

NO DEGREES

The conferring of a degree is left to the universities, where it belongs, and the board makes no attempt to control the practice of otolaryngology by efforts to promote any license or legal regulation whatever. It simply aims to establish a standard of fitness to practice otolaryngology, and to certificate those who voluntarily apply and satisfy the board of their qualification.

VALUE OF CERTIFICATE

The five national otolaryngological associations responsible for the organization of the board are sponsoring its activities. Four of these associations require the board certificate from each applicant for membership.

Other important societies and organizations are following the example of these influential organizations. Moreover, the certificate of the board is required of candidates for appointments in many and various important positions in hospitals, colleges, etc. It is expected that the medical public and the lay public will learn to discriminate between those who are well fitted and those who are not, and will be influenced by the certificate of the board in arriving at their conclusions.

CLASSIFICATION OF CANDIDATES

Applicants for examination and for the certificate of the board are divided into classes according to the length of time they have practiced otolaryngology.

(Limited practice in otolaryngology interpreted as 90% otolaryngological practice—ophthalmology excepted.)

Class I—Limited Practice—15 years or more.
Class II—Limited Practice—10 to 15 years.
Class III—Limited Practice—5 to 10 years.
Class IVA—Limited Practice—5 years.
Class IVB—Limited Practice—3 and 4 years.

(Only candidates having completed a satisfactory residency or an acceptable full academic year basic science course are eligible to IVB.)

REQUIREMENTS
UNTIL JAN. 1, 1942

The following general requirements are demanded by the board:

First. A candidate acceptable for the examination must be a graduate from a school approved by the Council on Medical Education and Hospitals of the American Medical Association; furthermore, he must have at least one year of internship in an approved hospital.

Second. Membership in the American Medical Association or, by courtesy, membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association. Except as here provided, membership in other societies should not be required.

Third. In addition, a candidate must have completed at least three years graduate preparation for the specialty, at least one year (more desirably two) in a recognized residency or in basic courses and followed by private practice in otolaryngology.

Fourth. Five years of specialized practice will be accepted in lieu of the requirements of paragraph 3 until Jan. 1, 1942.

Fifth. Application must be made on a special blank procured from the secretary. It must be executed and returned to the secretary, together with other required credentials, sixty days in advance of the examination at which the candidate desires to appear.

Sixth. All applicants must send a small photograph with application and must present themselves in person before the board.

Seventh. Fee for the examination is $50 and same must accompany application blank. No application will receive consideration until fee is paid.

Eighth. An application remains valid only five years—therefore, an applicant must appear for examination within this time or forfeit fee. The fee under no circumstances is returnable.

If the candidate fails in an examination he will be admitted to a second examination after one year, but within the regulation time limit of his application. Sixty days' notice of intention to appear is required. If a candidate who has failed does not appear before the expiration of validity of his application he will be required to make new application and pay additional fee of $50 before reexamination.

An applicant having failed twice, must file a new application, pay an additional fee of $50 and convince the board of additional postgraduate study previous to being assigned appointment for another examination.

Examinations covering two or three days will be held bi-annually at, or near, the time and place of meeting of the American Medical Association, and of the American Academy of Ophthalmology and Otolaryngology.

An extra examination is sometimes held provided the class of applicants is large enough to warrant it.

Candidates are required to sign the following pledge:

I hereby apply to the American Board of Otolaryngology for examination by the said board in accordance with its rules and herewith enclose the fee of fifty ($50) dollars. I hereby agree that prior to an examination, or subsequent to my examination, the board may investigate my standing and reputation as a physician, including my reputation for complying with the standard of ethics of the profession, and may refuse to examine me, or, having examined me, may refuse a certificate, and such refusal to grant a certificate, whether justified or otherwise, may not and shall not be questioned by me in any court of law or equity or other tribunal, nor shall I have any claim, in the event of such refusal, to a return of the fee accompanying this application.

PRACTICAL EXAMINATION

1—Written examinations:
Class III, Class IVA and Class IVB.
2—Pathology:
Microscopy—Class IVA, Class IVB.
Gross—Class III, Class IVA and IVB.
3—Clinical examination of patients: To include history taking; physical and functional examinations; use of laboratory and x-ray findings; discussion of differential diagnosis; and discussion and defense of his findings, opinion and suggested management.
All classes.
4—Didactic examination to be a private, oral examination covering any aspect of otolaryngology and its interrelation with general medicine.
All classes.
Communications should be addressed to the secretary-treasurer.

AMERICAN BOARD OF PATHOLOGY, Inc.

A. H. SANFORD, President, Rochester, Minn.
FREDERICK H. LAMB, Vice President, Davenport, Iowa.
FRANK W. HARTMAN, Secretary-Treasurer, 2799 W. Grand Blvd., Detroit.
ALVIN G. FOORD, Pasadena, Calif.
N. CHANDLER FOOT, New York.
HOWARD T. KARSNER, Cleveland.
ROY R. KRACKE, Emory University, Ga.
JOSIAH J. MOORE, Chicago.

ORGANIZATION

In June 1935 the Section on Pathology and Physiology of the American Medical Association and the American Society of Clinical Pathologists appointed committees which acted jointly in consideration of the feasibility and necessity of a national qualifying board. The joint committees agreed unanimously that such a board should be established and proceeded to draw up by-laws for such a board. In May 1936 the American Society of Clinical Pathologists and the Section on Pathology and Physiology of the American Medical Association accepted the proposed by-laws, authorized the nomination of four members each to the board and suggested incorporation in the state of Michigan. Approval of the board by the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association was given. On July 19, 1936, the organization of the board was carried out in Chicago.

The officers of the board who were elected at this meeting, were:

A. H. Sanford, President.
Frederick H. Lamb, Vice President.
F. W. Hartman, Secretary-Treasurer.

Drs. Hartman and Moore of the A. M. A. Section and Drs. Sanford and Lamb of the A. S. C. P., whose terms on the board expired in 1940, were renominated by their respective organizations and were reelected by the board. The president, vice president and secretary-treasurer were also reelected for 1940-1941.

PURPOSES

A. To encourage the study and promote the practice of pathology.

B. To elevate the standards and advance the cause of pathology, by encouraging its study and improving its practice.

C. To determine the competence of those wishing to practice this specialty of pathology and to arrange, conduct, and control investigations and examinations to determine the qualifications of such individuals who voluntarily apply for the certificates issued by the corporation.

D. To grant and issue certificates in the special field of pathology to voluntary applicants therefor and to maintain a registry of holders of such certificates.

E. To serve the public, the medical profession, hospitals, and medical schools by preparing and furnishing lists of specialists who have been certified by the corporation.

VALUE OF THE CERTIFICATE

Judging from the experience of other specialties operating a certifying board it is anticipated that the certificate will be of value in that the medical profession, the lay public, and hospital administrators will utilize certificates from the board as a means of discriminating between those that are thoroughly qualified in pathology and those that are not. Lists of those holding certificates will be made available from time to time by this board through the publication of the same in pamphlets and in national medical journals.

BOARD NOT AN EDUCATIONAL INSTITUTION

The board is in no sense an educational institution and the certificates of the board are not to be considered degrees. Therefore the certificate does not confer on any person legal qualifications, privileges, or license to practice medicine or the specialty of pathology. The board does not purport in any way to interfere with or limit the professional activities of any licensed physician. Its chief aim, as stated above, is to standardize the qualifications for the specialty of pathology and to issue certificates to those voluntarily complying with the requirements of the board.

GENERAL REQUIREMENTS

A. General qualifications.

1. Satisfactory moral and ethical standing in the profession.

2. License to practice medicine.

3. Membership or associate membership in the American Medical Association or by courtesy membership in such Canadian or other national medical societies as are approved by the Council on Medical Education and Hospitals of the American Medical Association.

4. That the applicant devotes his time primarily and principally to the practice of pathology.

B. Professional education.*

1. Graduation from a medical school in the United States or Canada, approved by the Council on Medical Education and Hospitals of the American Medical Association.

C. Special training, to be effective after July 1, 1938:

1. Completion of an internship of not less than one year in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association.

2. A period of study, exclusive of internship, of not less than three calendar years, exclusive of reasonable vacation periods, in an institution or department of pathology recognized by the same Council and the Board of Trustees as competent to provide a satisfactory training in the field of pathology. This period of special training preparation shall include the following:

(a) Graduate training for one year in the various phases of clinical pathology.

(b) Training and experience of not less than two years in a department of pathologic anatomy.

(c) Such training may be combined or in sequence.

3. A fifth year of training or practice in pathology.

D. Special qualifications:

1. The board may accept candidates without special training as outlined in Section C above provided that:

(a) The candidate shall have been for a period of five years of professorial rank in a department of pathology in an approved medical school, or

(b) The candidate shall have been practicing pathology for ten years in a senior position in a hospital, having an adequate department of pathology, and approved by the Council on Medical Education and Hospitals of the American Medical Association.

Candidates with special qualifications, as outlined in Section D above, may be certified without examination, at the discretion of the board.

APPLICATION BLANK AND FEE

Application must be made on the special form which may be procured from the secretary and forwarded with other required credentials and the application fee. Applications cannot be given consideration by the board unless accompanied by the application fee.

The application or examination fee for candidates is $35. If certified without examination $10 of fee will be refunded. If the candidate fails in his examination he will be admitted to a second examination after one year, but not later than three years, without additional fee. After two reexaminations the applicant must file a new application and pay an additional fee before a fourth examination will be given.

The examination fee of $35 has been arrived at after careful consideration, and is based on actual estimates of the expense of examination and administration. None of the board members receive any compensation for their services except actual expenses incurred.

If the applicant, for any reason, is deemed ineligible for examination by the board his fee will be returned; however, the application fee is not returnable after the candidate has officially been accepted for examination and notified to report for the same.

EXAMINATIONS

Written and oral examinations will be held at or near the time and place of national medical meetings at the discretion of the board. If a number of applications from any region of the country are received an examination in conjunction with a national medical meeting in that section will be arranged so that the financial outlay of the applicant in meeting the examiners will be as small as possible.

The examinations are to be based on the broad principles of pathology with emphasis on diagnosis and interpretation. The applicant may apply for certification in either pathologic anatomy or clinical pathology, or both. These general subjects have been defined in the by-laws as follows:

1. Pathologic anatomy is that branch of pathology which deals with the morphological aspects of disease, recognition being given that this definition covers two phases of pathology.

(a) The applied phase, with special attention to biopsy description and diagnosis.

(b) The academic phase of teaching and general morphological diagnosis.

2. Clinical pathology is that branch of pathology which deals with bacteriology, immunology, biochemistry, parasitology, hematology, and clinical microscopy, in relation to the diagnosis, prognosis, and treatment of clinical disease.

All communications should be addressed to the secretary-treasurer.

* NOTE: In case of an applicant whose education and/or training has been received outside the United States or Canada, his credentials must be acceptable to the National Board of Medical Examiners and the American Board of Pathology.

AMERICAN BOARD OF PEDIATRICS, Inc.

BORDEN S. VEEDER, President, St. Louis.

C. ANDERSON ALDRICH, Secretary-Treasurer, 723 Elm St., Winnetka, Ill.

HORTON CASPARIS, Nashville, Tenn.

FRANKLIN PAUL GENGENBACH, Denver.

CHARLES F. McKHANN JR., Ann Arbor, Mich.

EDWARD BYER SHAW, San Francisco.

HAROLD COE STUART, Boston.

PHILIP VAN INGEN, New York.

ALFRED AUGUSTUS WALKER, Birmingham, Ala.

ORIGIN

The American Board of Pediatrics was established in June 1933 by joint action of the American Pediatric Society, the American Academy of Pediatrics and the Section on Pediatrics of the American Medical Association after consideration of the report of a committee on pediatrics as a special field of medical practice. The committee recommended that the certification plan adopted and in use in the fields of ophthalmology, otolaryngology, gynecology and obstetrics, and dermatology be adapted to pediatrics. Similar boards have been subsequently formed in all the other special fields.

In order to correlate the activities of the various qualifying boards there has been formed the Advisory Board on Medical Specialties, composed of representatives of all the qualifying boards, including the American Board of Pediatrics, as well as representatives of the Association of American Medical Colleges, the National Board of Medical Examiners, the Federation of State Medical Boards of the U. S. A. and the American Hospital Association.

Any method of certification in any specialty must be national in scope, must in its ultimate analysis be controlled by the men in each special field and must be independent of society membership or affiliation. The American Board of Pediatrics fulfils these three essentials: A uniform standard of competency is set up, the character of which is assured through the affiliation with the Advisory Board on Medical Specialties; the board is controlled by pediatricians, its membership being composed of three men appointed by each of the three national pediatric societies; the board is not a medical society, however, and certification is independent of society affiliation.

FUNCTION

The functions of the board are outlined in the articles of incorporation as follows:

"To encourage the study, improve the practice and elevate the standards of pediatrics; and to grant and issue to physicians, duly licensed by law, certificates or other equivalent recognition of special knowledge in pediatrics."

The board has interpreted this to mean that its efforts to encourage and improve the practice of pediatrics shall be limited to its function of certification of competency in the specialty. Obviously other organizations are better able to further the general improvements in pediatrics.

The board specifically defines its activities as follows:

1. To establish standards by which the competency of men to practice pediatrics may be estimated.

2. To arrange, control and conduct examinations to test the qualifications of those desiring certification as pediatricians.

3. To grant certificates of qualification to those applicants who meet the standards successfully.

The board further feels that in carrying out these activities it is merely acting as the agent of the three societies which appointed its members and initiated the project.

No financial recompense of any kind is made to any member of this board except to cover actual traveling expenses to meet-

ings and examinations. The $30 fee is fixed below that of any of the similar examining boards of other specialties. In the light of experience of the existing boards it may later be necessary to raise this fee to carry on the work of the board successfully.

CERTIFICATE—NOT A DEGREE

Certificates granted are in no sense degrees, nor do they purport to confer upon any person any legal qualification, privilege or license to practice pediatrics. Neither does the board intend in any way to limit the activities of any licensed physicians. It is merely attempting to standardize qualifications and to issue certificates to those who voluntarily comply with the requirements.

VALUE OF THE CERTIFICATE

It is anticipated that the certificate will become of value in that both the medical and lay public, including hospital directors, will soon utilize the certificate from this board as a means of discriminating between those who are well grounded as pediatricians and those who are not.

A certificate is required as one of the qualifications for new members of the American Academy of Pediatrics. The certificate of the American Board of Pediatrics is recognized by the Council on Medical Education of the American Medical Association. Holders of certificates are so designated in the directory of the American Medical Association.

Lists of those holding certificates will be published by this board from time to time. Such lists will also be published in the leading pediatric journals of the country.

APPLICANTS FOR CERTIFICATES

Requirements for Applicants.—Each applicant for a certificate must establish in a manner satisfactory to the board that he is of high ethical and professional standing, is a graduate of a medical school which is satisfactory to the board, and has received adequate training in pediatrics as a specialty in addition to passing the examination given by this board.

Applicants must be citizens of the United States, of its dependencies, or of Canada.

Applicants will be divided into two classes, according to the length of time they have been engaged in the specialty.

Following is the classification of applicants for certification. The changes are based upon the experience gained from examination and upon the general requirements as adopted by the Advisory Board of Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association.

Group I.—Physicians who have specialized in pediatrics for ten years or more. After July 1, 1943, Group I will be abolished.

The minimum requirements for *Group II* are as follows:

Graduate of a Class A medical school.

One year's intern service in a recognized hospital.

Two years' service in a pediatric center.*

An additional term of two years of specialized study and/or practice.

The board defines service in a pediatric center as full time devoted to rounded experience in an acceptable hospital or a graduate course, which includes ward and outpatient service and both therapeutic and preventive pediatrics. The time served in pediatric centers need not be continuous or spent in the same institution. In the case of a post-graduate course an academic year will meet the requirement of one year's work.

The application fee is $30 and must be remitted with the application. Refund will be made only if the applicant is refused examination. The applicant who has failed in an examination will not be required to pay a second fee if he takes another examination after the lapse of two years.

Application must be made on special blanks which may be secured from the secretary. These must be sent to the secretary at least four months before the date at which the candidate expects to take the examinations.

Letters from two competent pediatricians recommending each applicant must be sent to the secretary of the board. These letters are not to accompany the application, but should be sent directly to the secretary. No member of the board may recommend any applicant.

INFORMATION CONCERNING EXAMINATIONS

Examinations will be held at or near the time and place of meetings of the American Medical Association and of the American Academy of Pediatrics, or at other times and places at the discretion of the board, depending on the number of applicants from any region of the country. It is proposed to arrange examinations in different cities so that as little financial burden as possible will be placed upon the applicants in meeting the examiners.

The purpose of these examinations is to determine the applicant's competency to practice pediatrics. This board feels that the best impression of an applicant's ability can be obtained by oral examination although written ones may be substituted at times. It is not proposed at the present time to require the applicant to send in case reports. The board feels that growth and development are fundamental parts of pediatric training.†

A list of papers or books published must be sent with the application blank.

Further information as to the scope of the examinations will be published as soon as available. It should be emphasized that competency in the practice rather than in the theory of pediatrics is required.

Communications should be addressed to the secretary.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, Inc.

H. DOUGLAS SINGER, President, Chicago.
C. MACFIE CAMPBELL, Vice President, Boston.
WALTER FREEMAN, Secretary-Treasurer, 1028 Connecticut Ave., N.W., Washington, D. C.
LOUIS CASAMAJOR, New York.
FRANKLIN G. EBAUGH, Denver.
HANS H. REESE, Madison, Wis.
TITUS H. HARRIS, Galveston, Texas.
NOLAN D. C. LEWIS, New York.
EDWARD A. STRECKER, Philadelphia.
HENRY W. WOLTMAN, Rochester, Minn.
TRACY J. PUTNAM, New York.
LLOYD H. ZIEGLER, Wauwatosa, Wis.

HISTORY AND STATEMENT OF PRINCIPLES

The American Board of Psychiatry and Neurology was founded in 1934 following conferences of committees appointed by the American Psychiatric Association, the American Neurological Association, and the Section on Nervous and Mental Diseases of the American Medical Association. This action was taken in response to a widespread desire among specialists in psychiatry and neurology for some means of distinguishing the fully qualified specialist from the would-be specialist of inferior training and inadequate experience. That this desire is by no means limited to those who practice psychiatry and neurology is indicated by the formation of corresponding boards covering internal medicine, surgery, and the major specialties. The success of this method of distinguishing the specialists is indicated by the increasing number of candidates taking the examinations, and by the listing accorded in the American Medical Directory to those specialists holding the certificates of the various boards.

CONSTITUTION AND ACTIVITIES

The American Board of Psychiatry and Neurology is composed of twelve members, four each from the American Neurological Association and from the American Psychiatric Association and two neurologists and two psychiatrists elected by the Section on Nervous and Mental Diseases of the American Medical Association. Annual elections to fill the places of members whose terms have expired take place in each of the nominating associations with the understanding that neurology and psychiatry are always equally represented on the board. The board holds annual meetings in December of each year for the transaction of whatever business may come before it and also holds special meetings for the purpose of examining candidates and of passing upon the qualifications of those seeking the certificate without examination.

FUNCTIONS

(a) To determine the competence of specialists in psychiatry and neurology.

(b) To arrange, control and conduct investigations and examinations to test the qualifications of voluntary candidates for certificates issued by the board.

(c) To grant and issue certificates or other recognition of special knowledge in the field of psychiatry and neurology to successful voluntary applicants therefor.

(d) To serve the public, physicians, hospitals and medical schools by preparing lists of practitioners who shall have been certified by the board.

(e) To consider and advise as to any course of study and technical training, and to diffuse any information calculated to promote and ensure the fitness of persons desirous of qualifying for a certificate of qualification to be issued thereby.

* A maximum of six months of this time may be spent in full time contagious work in a recognized hospital.

† The three volumes on Growth and Development of the White House Conference contain this material. Century Company, publishers.

INFORMATION FOR APPLICANTS

EXCERPTS FROM ARTICLE VII OF THE BY-LAWS

SECTION 1. *Application for Certificates.* Application for certificates shall be considered by the secretary only when made formally on the official application blank in such form as may be adopted from time to time by the board of directors and when accompanied by an application fee in such amount as may be fixed from time to time by the board of directors.

SECTION 2. *Form of Certificates.* There shall be separate certification in psychiatry and in neurology and two certifications or a combined certification for those qualified in both fields. The certificates shall be in such form as is approved by the board of directors.

SECTION 3. *Requirements for Applicants.* Each applicant for a certificate must establish that—

(a) He is a physician duly licensed by law to practice medicine.

(b) He is of satisfactory ethical and professional standing.

(c) He is now a member of the American Medical Association, or a member of such medical societies as are recognized for purposes of certification by the Council on Medical Education and Hospitals of the American Medical Association. Exceptions to the foregoing may be made at the discretion of the board for good and sufficient reasons.

(d) He has received adequate training in psychiatry or neurology, or both, as a specialty.

SECTION 4. No candidate is eligible for examination by the board until he has completed at least five years of special training and experience in neurology or psychiatry for a single certificate, or at least six years of training and experience for certification in both neurology and psychiatry.

CLASSES OF APPLICANTS AND FEES

Applicants may request certification in psychiatry, or in neurology, or in both psychiatry and neurology.

Limitation of practice to the specialty of psychiatry and/or neurology need not be complete provided a candidate both by his previous training, experience and standing, and by examination, can prove his competency to practice that specialty.

However, in case a physician has already been certified by one of the other boards as a specialist in another field, he will not be considered for certification in psychiatry and/or neurology except under special circumstances.

Class I

Physicians who graduated from medical school in 1919 or before and who have carried on specialized practice in neurology and/or psychiatry for at least fifteen years are to be considered on their professional record and passed, if satisfactory to the Board, or further evidence of qualification or examination may be required.

A candidate in Class I who has received certification in either psychiatry or neurology may apply within three years for certification in the other field without additional fee. After three years such application shall be considered as a new application with corresponding fees.

When certification in Class I has been refused, the candidate may file application for reconsideration within three years without additional fee. After three years such application for reconsideration shall be considered as a new application with corresponding fees.

Class II

Physicians who graduated from medical school up to and including 1929 and who have practiced the specialty of psychiatry and/or neurology for at least five years will be required to pass an examination in psychiatry or neurology, or both.

Class III

Physicians who graduated after 1929, up to and including 1934, will be required to pass an examination to satisfy the board that they have adequate knowledge of all subjects specified in the by-laws for candidates graduating after 1934. Their previous training and experience must be acceptable to the board.

Class IV

Candidates graduating from medical school after 1934 shall fulfil the preceding general requirements as given in Section 3 of Article VII and the following special requirements:

PROFESSIONAL EDUCATION

(1) Graduation from a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association.

(2) Completion of a general interneship of not less than one year in a hospital approved by the same Council.

SPECIAL TRAINING

(These requirements are to be placed in force as soon as practicable after Jan. 1, 1940. In the meantime a syllabus covering the knowledge required of the candidate has been prepared and is available to those who request it.)

Admission to the examination for certification in neurology or psychiatry requires a total experience of not less than five years. This period shall include the following:

1. A period of study, after the general internship, of not less than three full years in institutes, hospitals, clinics, dispensaries, laboratories, and other institutions recognized by the Council of the American Medical Association and approved by the American Board of Psychiatry and Neurology as competent to provide a satisfactory training in psychiatry and/or neurology.

(a) As subject matter,

Neuro-anatomy	Psychobiology
Neurophysiology	Psychopathology
Neuropathology	Neuroroentgenology
Clinical neurology	Clinical psychiatry

and other basic medical sciences, which, in the opinion of this board, are necessary to the proper understanding and treatment of psychiatric and/or neurologic disorders.

2. An additional period of not less than two years of practice in psychiatry and/or neurology.

3. Candidates wishing to be admitted to the examinations for certification in both fields must have had a minimum of six years of experience in both fields.

PAYMENT OF FEES

The candidate on filing his application shall accompany it with an application fee of $25. When notified by the Secretary that he is eligible for examination he shall send the examination fee of $25 to the secretary at least two weeks before the date of the examination. The certification fee of $25 is payable upon notification by the board that certification has been awarded the candidate in Class I on his record. No fees will be returned.

The same examination is given whether a candidate applies for certification in psychiatry, or in neurology, or in both psychiatry and neurology. The board requires some proficiency in neurology on the part of those it certifies in psychiatry and vice versa, but judges the candidate in accordance with the certificate he seeks.

Should a candidate receive certification in either psychiatry or neurology, he may apply within three years for partial examination for the certificate in the complementary subject, upon payment of a complementary examination fee of $10. After three years, the second application shall be considered a new application, with corresponding $25 fees.

EXAMINATIONS

Date and places of examination are set by the board at its discretion and are announced in *The Journal of the American Medical Association*, in the *American Journal of Psychiatry*, in the *Journal of Nervous and Mental Disease*, and in the *Archives of Neurology and Psychiatry*.

The examinations are designed to test the ability of the candidates to meet the situations in which they might at any time be called upon as specialists to assume responsibility. They will be of such a type that no adequately trained individual will fail, yet they will be sufficiently searching so that the specialist-in-fact will be separated from the specialist-in-name. Each candidate is required to identify and to discuss the function of the more important anatomic structures in the brain and spinal cord, to discuss gross and microscopic pathologic specimens and to interpret roentgenograms dealing with neurologic disorders. He is examined orally on the subjects of psychobiology and psychopathology. These examinations in the preclinical subjects usually last about two hours. Each candidate examines two patients with neurologic disorders and two with psychiatric disorders, and discusses with the examiners the various problems involved. One hour, on the average, is allotted to each of these four clinical examinations. The manner of examining both neurologic and psychiatric patients and the reasoning and deductions therefrom constitute the most important part of the examination. Some acquaintance with the history of psychiatry and neurology, with the body of doctrine, and with the recent advances, is presupposed.

REEXAMINATIONS

A candidate who has failed in one examination is eligible to reexamination in the whole subject, within three years, on payment of a reexamination fee of $10. A candidate who has failed in one examination and who does not apply for reexamination within three years or a person who has applied within that time but who has failed a second time will be considered

a new applicant, with corresponding $25 fees. The $10 reexamination fee also applies to candidates conditioned in one or more subjects at any time within three years of the first examination, and is payable before each reexamination.

HANDLING OF APPLICATIONS

An application, in order to be considered at any meeting, must be in the hands of the secretary of the board not less than seventy days before the date of such meeting.

The secretary of the board on receipt of an application shall forthwith make inquiries from those to whom the candidate refers and from such other persons as the secretary may deem desirable and shall verify the candidate's record from the biographical records of the American Medical Association, after which he shall forward the application to the committee on credentials. This committee shall consider the application and other information available and notify the secretary whether the application is accepted. The certification of a candidate in either psychiatry or neurology, or both, shall be approved by a majority of the members of the entire Board at any meeting held for such certification.

PLEDGE

Each candidate is required to sign the following pledge:

"I hereby make application to the American Board of Psychiatry and Neurology, Incorporated, for the issuance to me of a certificate of qualification as a specialist in (a) Psychiatry; (b) Neurology; (c) Psychiatry and Neurology (check the one desired) and for examination relative thereto, all in accordance with and subject to its rules and regulations. Upon the issuance of the certificate I agree to and do become bound by the by-laws of the American Board of Psychiatry and Neurology, Inc., insofar as applicable.

"I agree to disqualification from examination or from the issuance of a certificate of qualification or to forfeiture and redelivery of such certificate of qualification in the event that any of the rules governing such examination are violated by me or for any one of the reasons set forth in the by-laws. I agree to hold said American Board of Psychiatry and Neurology, Inc., its members, examiners, officers and agents, free from any damage or claim for damage or complaint by reason of any action they, or any of them, may take in connection with this application, such examination, the grade or grades given with respect to any examination, and/or the failure of said corporation to issue to me such certificate of qualification."

RULES AND REGULATIONS
(ART. VII, SEC. 5, OF THE BY-LAWS)

The board of directors, from time to time, by resolution adopted by the affirmative vote of a majority then in office, may adopt, amend and repeal rules and regulations respecting requirements of applicants, the nature and extent of examinations and investigations and issuance of certificates.

REVOCATION OF CERTIFICATES
(ART. VII, SEC. 6, OF THE BY-LAWS)

All certificates issued by the corporation shall be issued subject to the provisions of the certificate of incorporation and of the by-laws of the American Board of Psychiatry and Neurology, Inc. Each such certificate shall be subject to revocation in the event that:

(a) The issuance of such certificate or its receipt by the physician shall have been contrary to or in violation of any of the provisions of the corporation's certificate of incorporation or by-laws; or

(b) The physician so certified shall not have been eligible in fact to receive such certificate, irrespective of whether or not the facts constituting him so ineligible were known to any or all of the directors of the corporation or could have been ascertained by any or all of the directors of the corporation at the time of the issuance of such certificate; or

(c) The physician so certified shall have made any deliberate misstatement of fact in his application for such certificate or in any other statement or representation to the corporation, its directors, representatives or agents; or

(d) The physician so certified shall have been convicted by a court of competent jurisdiction of a felony or of any misdemeanor involving, in the opinion of the board of directors of the corporation, moral turpitude in connection with his practice of medicine; or

(e) The physician so certified shall have had his license to practice medicine revoked or shall have been disciplined or censored as a physician by any court or other body having proper jurisdiction and authority.

FORM OF CERTIFICATE

The secretary shall have prepared subject to the approval of the board members a form of certificate containing the following wording:

THE AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

This is to certify that.....has satisfied the requirements of the board and is hereby certified as qualified to practice the specialty of Psychiatry and/or Neurology.

(Signed) President.....
Vice President.....
Secretary .....

Communications should be addressed to the secretary.

AMERICAN BOARD OF RADIOLOGY, Inc.

G. W. HOLMES, President, Boston.
J. W. PIERSON, Vice President, Baltimore.
BYRL R. KIRKLIN, Secretary-Treasurer, 102 Second Avenue, S.W., Rochester, Minn.
A. C. CHRISTIE, Washinngton, D. C.
E. C. ERNST, St. Louis.
E. L. JENKINSON, Chicago.
L. C. KINNEY, San Diego, Calif.
U. V. PORTMANN, Cleveland.
DOUGLAS QUICK, New York.
LEROY SANTE, St. Louis.
E. H. SKINNER, Kansas City, Mo.
ALBERT SOILAND, Los Angeles.
M. C. SOSMAN, Boston.
R. H. STEVENS, Detroit.
B. P. WIDMANN, Philadelphia.

HISTORY AND AUTHORITY FOR ORGANIZATION

The medical profession has long felt that there should be a standard of minimal requirements for the practice of any specialty in medicine in order to protect the public, the profession in general, and the specialists themselves. Some of the states have attempted by statute to prescribe such requirements in certain branches. Unless a better method of regulation were found, the other states would be likely to enact similar laws. The result would be forty-eight different standards for each of the many medical specialties. Obviously, a more practicable solution would be for each special group to put its own house in order and place its mark of approval on those qualified to practice as specialists in that particular field. Accordingly, in 1932, five nation-wide radiologic organizations, the Section on Radiology of the American Medical Association, the American Roentgen Ray Society, the Radiological Society of North America, the American College of Radiology, and the American Radium Society, each appointed a committee of three members to confer and investigate the feasibility of establishing a qualifying board. The following men were appointed by these five organizations: Drs. G. W. Holmes, J. W. Pierson, E. L. Jenkinson, W. E. Chamberlain, E. C. Ernst, W. F. Manges, L. R. Sante, L. C. Kinney, A. C. Christie, Albert Soiland, W. W. Wasson, Henry Schmitz, Lester Hollander, Rollin H. Stevens and B. R. Kirklin.

This combined committee met at Milwaukee in 1933, during the meeting of the American Medical Association, agreed unanimously that such a board should be established and so reported to the respective organizations. Each of the organizations approved the report, appointed three representatives, and empowered them to proceed to the formation of a national radiologic board. The members of the board thus chosen were: Drs. W. F. Manges, L. R. Sante and B. R. Kirklin, representing the American Roentgen Ray Society; Drs. A. C. Christie, E. C. Ernst and E. L. Jenkinson (succeeding Dr. Byron H. Jackson, originally appointed) representing the American College of Radiology; Drs. R. H. Stevens, Henry Schmitz and H. K. Pancoast, representing the American Radium Society; Drs. L. J. Menville, M. C. Sosman and Albert Soiland, representing the Radiological Society of North America, and Drs. L. C. Kinney, J. W. Pierson and G. W. Holmes, representing the Section on Radiology of the American Medical Association.

The board was incorporated, organized and held its first meeting in Washington, D. C., in May 1934; at that time the by-laws were adopted and provision was made by resolution for its proper function. The officers of the board elected at this meeting were:

Dr. H. K. Pancoast, President.
Dr. A. C. Christie, Vice President
Dr. B. R. Kirklin, Secretary-Treasurer.

This move put into action the determined effort on the part of these five national organizations to improve the standards of the practice of radiology. It expects to accomplish this by various activities, such as the investigation and encouragement

of facilities for graduate extension study and active clinical assistantships for men desiring to specialize in radiology; it will endeavor by regular examinations to determine the competence of specialists in radiology who apply for the certificate.

During 1935 the American Board of Radiology was accepted for membership in the Advisory Board for Medical Specialties and was also approved by the Council on Medical Education and Hospitals of the American Medical Association. Hereafter the list of Diplomates of the Board will take the place of the Council's list of approved radiologists, and the latter list will be discontinued.

PURPOSES

First: To encourage the study and promote and regulate the practice of radiology.

Second: To elevate the standards and advance the cause of radiology by encouraging its study and improving its practice.

Third: To determine the competence of specialists in radiology; to arrange, control and conduct investigations and examinations; and to test the qualifications of voluntary candidates for certificates to be issued by the board.

Fourth: To serve the public, physicians, hospitals and medical schools by preparing lists of practitioners who shall have been certified by the board.

VALUE OF CERTIFICATE

The national radiologic organizations which have participated in the formation of the board and are sponsoring its activities, as well as other organizations, attach considerable importance to its certificate. It is expected that both the medical and the lay public, including hospital directors, will soon come to utilize the certificate from this board as a means of discriminating between those who are well grounded as specialists in radiology and those who are not.

To this end lists of those holding certificates from this board will be published and issued from time to time by the board. Similar lists will be published by the *American Journal of Roentgenology and Radium Therapy, Radiology,* and *The Journal of the American Medical Association.* The Directory of the American Medical Association will indicate by a numerical symbol in the biographic data of those whose names are eligible to appear on these lists that they are diplomates of this board.

For emphasis it is repeated that the board does not intend in any way to interfere with or limit the professional activities of any duly licensed physician, but it does aim toward standardized qualifications for those who claim to be specialists in radiology.

CERTIFICATES

A certificate will be issued to each candidate who meets the requirements of the board, to the effect that the holder of the certificate has had adequate training in radiology and has successfully fulfilled the requirements of the board.

A certificate granted by this board does not of itself confer, or purport to confer, any degree, or legal qualifications, privileges, or license to practice radiology. Certificates of the board shall be issued upon one of two forms:

1. A certificate to the effect that the applicant has been found qualified to practice radiology in all its branches.

2. A certificate to the effect that the applicant has been found qualified to practice radiology in one or more of the following special fields: (a) roentgenology; (b) diagnostic roentgenology; (c) therapeutic radiology.

DEFINITIONS

For the purposes of this board, the following definitions are adopted:

1. Radiology is that branch of medicine which deals with the diagnostic and therapeutic application of radiant energy including roentgen rays and radium.

2. Roentgenology is that branch of radiology which deals with diagnostic and therapeutic application of roentgen rays.

3. Diagnostic roentgenology is that branch of radiology which deals with the diagnostic application of roentgen rays.

4. Therapeutic radiology is that branch of radiology which deals with the therapeutic application of roentgen rays and radium.

GENERAL REQUIREMENTS

Each applicant for admission to the examination shall be required to present evidence that he has met the following standards:

(A) General Qualifications.*

(1) Satisfactory moral and ethical standing in the profession.

(2) A license to practice medicine.

(3) Membership in the American Medical Association, or, by courtesy, membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association.

(4) That the applicant holds himself out to be a specialist in radiology or one of its branches as defined under definitions, and that he uses roentgen rays or roentgen rays and radium either personally or under his direct supervision in a substantial portion of his practice.

(B) Professional Education.*

(1) Graduation from a medical school of the United States or Canada, recognized by the Council on Medical Education and Hospitals of the American Medical Association.

(2) Completion of an internship of not less than one year in a hospital approved by the same council.

(3) Three years' training in radiology or sufficient experience in lieu thereof.

(C) Special Training.* (To be effective Jan. 1, 1942.)

(1) A period of study after the internship of not less than three calendar years in an institution or radiologic department recognized by the same council and the board as competent to provide a satisfactory training in the field of radiology.

(2) This period of specialized preparation shall include:

(a) Graduate training in pathologic anatomy, radiophysics, and radiobiology.

(b) An active experience of not less than twenty-four months in a radiologic department recognized by the board and the council as capable of providing satisfactory training.

(c) Examination in the basic sciences of radiology as well as in the clinical aspects thereof.

APPLICATIONS

The board desires to appraise the candidate's educational opportunities (premedical, medical and radiologic), the ability of his instructors, his hospital and teaching positions, his original investigations, his contributions to radiologic literature, his membership in medical societies, and his local and general reputation.

For this purpose, application must be made on a special blank which may be obtained from the secretary. No application will be considered unless made on the regular application blank. This application shall be forwarded with the required data, two unmounted photographs, and the fee of $35, at least two months before the date of the examination.

FEE

A fee of $35 must accompany each application blank. This fee will not be returned and no application will be considered until the fee is received. This fee has been carefully computed and is used entirely for administrative purposes. Members of the board and special examiners do not receive any compensation except for actual expenses connected with holding the examinations. As the number of candidates decreases, it may become necessary to raise the fee.

Checks should be made payable to the American Board of Radiology.

EXAMINATIONS

Each year the board will hold an examination in conjunction with the annual meeting of the American Medical Association, and, when sufficient applications are on file, a second examination will be held in conjunction with the annual meeting of the American Roentgen Ray Society and/or the Radiological Society of North America.

For the present, examinations consist of practical and oral examinations, although written examinations may be added later. The examinations are designed to test the candidate's fitness to practice radiology or one of its branches as a specialty. The board will endeavor to adapt this examination to the candidate's experience and years of practice. It will try especially to ascertain the breadth of his clinical experience, his knowledge of the basic sciences of radiology, and likewise his knowledge of the recent literature on radiology, and his general qualifications as a specialist in this branch of medicine.

The examination consists of tests in film interpretation and an oral examination in pathology, physiology, radiophysics and radiobiology, as well as the clinical applications of roentgen rays and radium. The applicant is also examined in "professional adaptability," in an attempt to ascertain his attitude toward his fellow practitioners and his patients.

* NOTE: In case of an applicant whose training has been received outside of the United States and Canada, the credentials must be satisfactory to the Advisory Board for Medical Specialties.

Whenever an applicant fails to pass the examination, the board, if requested, will make suggestions as to suitable courses of instruction for the purpose of overcoming his deficiencies.

REEXAMINATIONS

If the candidate fails in an examination he will be admitted to a second examination after one year has elapsed but not more than three years. He must give sixty days' notice of his intention to appear for reexamination and pay an additional fee of $15. If a candidate who has failed does not appear for reexamination before the expiration of three years, he will be required to make a new application and pay an additional fee of $35.

A candidate having failed twice must file a new application and pay an additional fee of $35.

FINAL ACTION OF THE BOARD

The final action of the board is based on the applicant's professional record, training, and attainments in the field of radiology, as well as on the results of his examination. Any radiologist who is practicing radiology honorably and efficiently should have no difficulty in obtaining a certificate. This board has been organized, not to prevent qualified radiologists from obtaining certificates, but to assist them in becoming recognized in their communities as men competent to practice in the special field of radiology.

REVOCATION OF CERTIFICATES

Certificates issued by this board are subject to the provisions of the Articles of Incorporation and the By-Laws. According to Article IX, Section 4, of the By-Laws "Any certificate issued by the Board of Trustees shall be subject to revocation in the event that:

(a) The issuance of such certificate or its receipt by the physician so certified shall have been contrary to or in violation of any provision of the Certificate of Incorporation of this the American Board of Radiology or of these by-laws; or

(b) The physician or party so certified shall not have been eligible in fact to receive such certificate; or

(c) The physician or party so certified shall have made any mis-statement of fact in his application or in any other communication to the board or its representatives; or

(d) The physician or party so certified shall have been convicted by a court of competent jurisdiction of a felony or of any misdemeanor involving, in the opinion of the Board of Trustees, moral turpitude; or

(e) If the physician or party so certified shall have had his license to practice medicine revoked or shall have been expelled from one of the societies or organizations which is represented by this corporation through eligibility of such society or organization to nominate and appoint members of this corporation."

Communications should be addressed to the secretary.

AMERICAN BOARD OF SURGERY, Inc.

EVARTS A. GRAHAM, Chairman, St. Louis.
ALLEN O. WHIPPLE, Vice Chairman, New York.
J. STEWART RODMAN, Secretary-Treasurer, 225 South Fifteenth St., Philadelphia.
HOWARD M. CLUTE, Boston.
ARTHUR W. ELTING, Albany, N. Y.
DONALD GUTHRIE, Sayre, Pa.
THOMAS M. JOYCE, Portland, Ore.
THOMAS G. ORR, Kansas City, Kan.
ROBERT L. PAYNE, Norfolk, Va.
FRED W. RANKIN, Lexington, Ky.
ERWIN R. SCHMIDT, Madison, Wis.
HARVEY B. STONE, Baltimore.
PHILEMON E. TRUESDALE, Fall River, Mass.

HISTORY

The organization of the American Board of Surgery was completed on Jan. 9, 1937. A plan for this organization had been carefully studied by a general committee representative of certain general and sectional surgical societies called together through the initiative of the American Surgical Association. As a result of the deliberations of this general committee a tentative plan of organization was adopted. This plan was reported to the cooperating surgical societies and was approved with the understanding that the board, when organized, would have the power to change or modify the proposed plan as it saw fit. This board has been created in accordance with the action of the Advisory Board for Medical Specialties as approved by the Council on Medical Education of the A. M. A., which has named twelve specialty fields as being suitable to be represented by such boards. These boards have the two-fold purpose of certifying those found to be qualified after meeting reasonable requirements, and of improving existing opportunities for the training of specialists within the field concerned. This is to be done for the protection of the public and the good of the specialty.

PERSONNEL

* The cooperating surgical societies selected jointly to form the board appointed their representatives as follows:

The American Surgical Association	3
The Surgical Section of the A. M. A.	3
The American College of Surgeons	3
The Southern Surgical Association	1
The Western Surgical Association	1
The Pacific Coast Surgical Association	1
The New England Surgical Society	1
	13

The term of membership is for six years. Each cooperating association has the appointing power of its representatives subject to the approval of the board.

PURPOSES

(a) To conduct examinations of satisfactory candidates who seek qualification by the Board.

(b) To issue certificates of qualifications to all those meeting the board's requirements.

(c) To improve the opportunities for the training of the surgeon.

REQUIREMENTS

(A) GENERAL QUALIFICATIONS

1. Moral and ethical standing in the profession satisfactory to the board.

The board, believing that the practice of "fee splitting" is pernicious, leading as it does to a traffic in human life, will reserve the right to inquire particularly into any candidate's practice in regard to this question.

2. Membership in the American Medical Association or, by courtesy, membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the A. M. A. Except as here provided, membership in other societies shall not be required.

3. Those who have limited their activities to the practice of surgery.

4. In exceptional instances the board may, in its discretion, accept for examination candidates who have met all preliminary requirements and have been in practice from six to sixteen years but whose formal training does not comply with the full requirements to be exacted in the future.

The board recognizes two groups of candidates who may be eligible for certification.

(A) The Founders Group—those who have already amply demonstrated their fitness as trained specialists in surgery. Application for membership in this group will be open until January 9, 1940. Those who receive the board's approval will be accepted for membership without examination from the following:

1. Those who from the time of the board's organization, January 9, 1937, hold the position of Professor or Associate Professor of Surgery in the approved medical schools of the United States or Canada.

2. Those who for fifteen years prior to the board's organization have limited their practice to surgery and have met the general qualifications required.

3. Such members of the cooperating societies represented on the board, in good standing January 9, 1937, who may be invited to membership in this group.

This group was closed January 1, 1940; no further applications received.

(B) Qualified by examinations—

In addition to the general qualifications the requirements for this group shall be as follows:

(a) PROFESSIONAL STANDING

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education

* The first three of these associations being national in scope, were allotted three representatives each, the remaining associations, one.

and Hospitals of the A. M. A., or graduation from an approved foreign school.

2. Completion of an internship of not less than one year in a hospital approved by the same Council, or its equivalent in the opinion of the board. This internship may be rotating or one devoted to a single branch of medicine as, for example, surgery, medicine, pathology, etc.

(c) SPECIAL TRAINING

After the completion of the year's internship there shall be a period of special training in surgery of not less than five years. During this period one's entire time must be devoted to surgical training supplemented by sufficient experience in the basic sciences to comply with the provisions of Paragraph 2. Such training may be taken in a recognized graduate school of medicine, or as resident in surgery in an acceptable hospital, or under a sponsorship accredited by the American Board of Surgery for such training.* By the latter statement is meant that one may secure the necessary training as an assistant to an accredited surgeon, provided suitable facilities for the education of the candidate are offered. It is understood that the board will accept a combination of training as outlined above.

(For example, one may take a graduate course in an acceptable graduate school for one year, a residency of two years, and an assistantship of two years.)

This period of special training shall be of such character that the relation of the basic sciences of anatomy, physiology, pathology, bacteriology and biochemistry is emphasized. Knowledge of these sciences as applied to clinical surgery will be required in the examination.

Adequate operative experience in which the candidate has assumed the whole responsibility will be required.

The above requirements, especially those referring to surgical training, are subject to change from time to time as the existing opportunities for training in this field of specialization may be broadened.

EXAMINATIONS

The qualifying examination will be divided into Part I (written) and Part II (clinical, bedside and laboratory). In both of these parts a knowledge of the practical application of the sciences fundamental to surgery will be required as previously stated.

PART I

This may be given simultaneously in as many centers as the board may determine suitable for the purpose. A candidate, to be eligible for Part I, must meet all requirements for Group B candidates. A card of admission to this part of the examination will be forwarded to the candidate from the secretary's office, certifying that these requirements have been met, as well as due notice as to the time and place of examination.

The examination in Part I shall cover a one day period. There shall be two sessions of three hours each. This written examination shall concern itself primarily with general surgical problems and in addition the application of the basic sciences of surgery to these problems.

PART II

In order to be eligible for Part II a candidate must have successfully passed Part I, in addition to having met the necessary preliminary requirements and having presented definite evidence of an adequate training in operative surgery satisfactory to the board.

This part of the examination shall be oral and practical and cover a one-day period, the schedule being arranged somewhat as follows:

8-9 A. M.—REGISTRATION

9 A. M.–12 Noon.—Clinical Surgery (diagnosis and management and the application of physiology, biochemistry and bacteriology, as the case being examined on may offer an opportunity for doing so. X-ray plate interpretation will also be included).

2-5 P. M.—Applied anatomy and surgical pathology.

It is probable that for the present this part of the examination can be held in one center or at the most, two. Later, however, as the demand grows, it will be necessary, in all probability, for the board to establish definite subsidiary board centers where this part may be held. At that time it will be necessary that the board appoint subsidiary boards in these centers, consisting of those already qualified as in Group A, to conduct this examination.

* The board makes no attempt to classify hospital residencies, usually accepting those approved by the American College of Surgeons and the Council on Medical Education and Hospitals of the American Medical Association.

GRADES

A candidate must receive a passing average for each part to be entitled to the board's certificate. No candidate shall pass a part who does not receive a grade of 60% or over in each subject of such a part. An average grade of 75% shall be considered as passing in each part. The following values have been assigned to Part II on the basis of the total of 100%; clinical surgery 50%, anatomy 30%, pathology 20%.

A candidate who fails in his examination in Part I shall have his papers reviewed by the examination committee.

REEXAMINATIONS

Candidates may be reexamined as often as they desire provided one year shall elapse between examinations, except that the board may, for good and sufficient reason, deny a candidate the privilege of reexamination.

Candidates shall be required to pay the same fees for Parts I and II at each reexamination in these parts.

FEES

The fee for Group A, Founders Group, shall be $25.

The fee for Group B shall be $75, payable as follows: $5 registration fee, which shall be returned if the candidate is not accepted for examination; $20 for Part I; and $50 for Part II.

This board is a non-profit organization. All fees will be used, after a reasonable amount is set aside for necessary expenses in maintaining its office, conducting examinations, etc., to aid in improving existing opportunities for the training of the surgeon.

CERTIFICATE

A certificate attesting to a candidate's qualification in surgery after meeting the requirements will be issued by the board, having been signed by its officers.

REVOCATION OF CERTIFICATE

Any certificate issued by the board shall be subject to revocation by the board at any time in case it shall determine in its sole judgment that a candidate, who has received a certificate, either was not properly qualified to receive it or has become disqualified since its receipt.

Proper forms for making application, and other information, will be furnished by the secretary-treasurer.

AMERICAN BOARD OF UROLOGY, Inc.

HERMAN L. KRETSCHMER, President, Chicago.

CLARENCE G. BANDLER, Vice President, New York.

GILBERT J. THOMAS, Secretary-Treasurer, 1009 Nicollet Avenue, Minneapolis.

NATHANIEL P. RATHBUN, Brooklyn.

GEORGE GILBERT SMITH, Boston.

CHARLES C. HIGGINS, Cleveland.

HENRY G. BUGBEE, New York.

ALFRED I. FOLSOM, Dallas, Texas.

T. LEON HOWARD, Denver.

ORGANIZATION

At the annual meeting of the American Association of Genito-Urinary Surgeons held at Niagara Falls, Ont., Canada, May 26-28, 1932, Dr. William F. Braasch called attention to the various qualification boards which had been established, or were in the process of being established, for the certification of specialists. He suggested that a committee should be appointed from this organization to investigate the advisability of establishing a similar board for the specialty of urology. A committee consisting of Dr. Braasch as Chairman, Dr. Henry G. Bugbee, and Dr. Hugh H. Young was appointed. This committee reported to the society in 1933, was reappointed to continue its efforts, and was given the power to act.

At the meeting of the American Urological Association in 1933, Dr. George R. Livermore, in his presidential address, suggested that all candidates for specialization in urology should have some definite preparation, and should be required to take a thorough examination before being recognized as specialists in urology. Dr. Livermore appointed Dr. Joseph F. McCarthy, chairman; Dr. George Gilbert Smith, and Dr. Herman L. Kretschmer as a committee to study this suggestion.

At the annual meeting of the American Medical Association in Milwaukee, June 12-16, 1933, a committee consisting of Dr.

Montague L. Boyd, chairman; Dr. A. I. Folsom and Dr. Frank Hinman was appointed to cooperate with similar committees from the American Association of Genito-Urinary Surgeons and the American Urological Association in the establishment of the American Board of Urology.

The first combined meeting of the committees from these three organizations was held on Oct. 11, 1933, in Chicago. Dr. Herman L. Kretschmer was made president; Dr. Joseph F. McCarthy, vice president; and Dr. William F. Braasch, secretary. These men were elected to serve as temporary officers. A permanent organization could not be effected, however, because the committee from the American Urological Association had not been given the power to act.

The second meeting of these committees was held in New York City, Feb. 2, 1934. Dr. Nathaniel P. Rathbun, president of the American Urological Association, was present at this meeting.

At the annual meeting of the American Urological Association held in Atlantic City, N. J., May 22-24, 1934, the committee reported the activities of the temporary "Board of Urology." This report, which contained suggestions for the guidance of future committees from this association, was accepted, and a new committee was elected by the association, and was given the power to act.

The permanent "American Board of Urology, Inc.," was organized at Chicago, Sept. 24, 1934. The committee members present from the American Association of Genito-Urinary Surgeons were: Dr. William F. Braasch, Dr. Henry G. Bugbee, and Dr. Gilbert J. Thomas; those from the American Urological Association were: Dr. Nathaniel P. Rathbun, Dr. Herman L. Kretschmer, and Dr. George Gilbert Smith; those from the Section on Urology of the American Medical Association were: Dr. A. I. Folsom, Dr. T. Leon Howard, and Dr. Clarence G. Bandler.

The officers of the board elected at this meeting were: Dr. Herman L. Kretschmer, president; Dr. Clarence G. Bandler, vice president; Dr. Gilbert J. Thomas, secretary-treasurer.

The board was incorporated May 6, 1935, and held its first legal meeting May 10, 1935.

PURPOSES

The first objective of the American Board of Urology, Inc., is to render better service to the public by insuring the competence of any physician or surgeon who is specializing, or who wishes to specialize, in the field of urology. It will elevate the standards and advance the cause of urology. It will investigate the curricula of medical schools, and will encourage adequate facilities for graduate instruction in urology.

FUNCTIONS

(a) The board will arrange to control and conduct examinations testing the qualifications of volunteer candidates.

(b) The board will grant and issue certificates or other evidence of special knowledge in the field of urology to voluntary applicants or to candidates for certification.

(c) The board will endeavor to serve the public, hospitals, medical schools, medical societies and practitioners of medicine and surgery by preparing lists of urologists whom it has certified.

LIMITATIONS OF FUNCTIONS

The conferring of degrees, "Doctor of Medicine" or "Bachelor of Medicine" remains with the universities, where it belongs, and this board makes no attempt to control the practice of urology by license, or legal regulations. This board does not intend in any way to interfere with or limit the professional activities of any duly licensed physician.

REASON FOR APPLYING FOR A CERTIFICATE; ITS VALUE

The American Urological Association, the American Association of Genito-Urinary Surgeons, and the Section on Urology of the American Medical Association are interested in furthering the cause of urology and have participated in the formation of this board. They are sponsoring its activities. The various national medical societies, the public, hospital directors and others, will utilize the certification from this board as a means of discriminating between those well grounded as specialists in urology, and those who are not.

Lists of individuals who have certificates from this board, and who are engaged in the practice of urology may be published in the Directory of the American Medical Association and will be published in a booklet issued from time to time by the American Board of Urology, Inc. The directory of the American Medical Association may indicate, by symbols in the biographical data, those whose names are eligible to appear on the list of diplomates of this board.

Application for this certificate is purely voluntary. There is only one type of certificate. No indication is given as to whether or not the candidate received his certificate with or without examination. All certificates are identical.

The Advisory Board for Medical Specialties working in conjunction with, and reporting to, the Council on Medical Education and Hospitals of the American Medical Association, has set certain standards of preparation for specialization which the American Board of Urology, Inc., wishes to adopt. The advisory board has drawn from the experience of all the present functioning boards, and has been of inestimable assistance in the formulation of the Constitution and By-Laws for the Board of Urology. Other organizations which now successfully operate boards of certification are:

The American Board of Ophthalmology, the American Board of Otolaryngology, the American Board of Obstetrics and Gynecology, the American Board of Dermatology and Syphilology, the American Board of Pediatrics, the American Board of Psychiatry and Neurology, the American Board of Radiology, the American Board of Orthopedic Surgery, the American Board of Internal Medicine, the American Board of Pathology and the American Board of Surgery. Among the organizations cooperating with the Advisory Board for Medical Specialties are: the Association of American Medical Colleges, the American Hospital Association, the Federation of State Medical Boards of the U. S. A., and the National Board of Medical Examiners.

APPLICATION BLANK: REQUIREMENTS FOR ALL APPLICANTS

Application for certification must be made on a special blank. This will be provided by the secretary and must be returned to him accompanied by other required data and credentials, and by $15 of the examination fee.

Requirements for Applicants. (Article VIII, Section 2, of the By-Laws of the American Board of Urology, Inc.)

Each applicant, before he shall become eligible to take the examination for certification in urology, must:

A. Have graduated from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association, and must have completed an internship of not less than one year in a hospital approved by the same council. (The former requirement is not applicable to a candidate who graduated from an institution now extinct, or whose graduation occurred before the American Medical Association had prepared a list of accredited medical schools.) All graduates of foreign medical schools must obtain a license in the state in which they propose to practice medicine and the certificate of the National Board of Medical Examiners before making application for certification.

B. Establish in a manner satisfactory to this board that he is a physician duly licensed by law to practice medicine, that he is of high ethical and professional standing and that he has received adequate special training in urology.

The board is attempting to increase and to standardize the facilities for urological training in teaching institutions, so that the expression "special training in Urology" may be interpreted to include:

1. A period of study, after the internship, of not less than three years in clinics, dispensaries, hospitals or laboratories recognized by the Council on Medical Education and Hospitals of the American Medical Association as competent to provide a satisfactory training in the special field of Urology.

This period of specialized preparation should include:

(a) graduate training in anatomy, physiology, pathology, and the other basic medical sciences which are necessary to the proper understanding of the disorders and treatment involved in the specialty of Urology.

(b) an active experience of not less than eighteen months in hospital clinics, dispensaries and diagnostic laboratories recognized by the Council on Medical Education and Hospitals of the American Medical Association as competent in the diagnosis and treatment of urologic conditions.

(c) examinations in the medical sciences basic to the specialty of Urology, as well as in the clinical, laboratory and public health aspects.

2. An additional period of not less than two years in the private practice of urology in the city from which he makes application.

These special requirements conform with the suggestions made by the Council on Medical Education and Hospitals of the American Medical Association.

C. Make application to the American Board of Urology, Inc., whose duty it shall be to investigate the applicant's credentials and make a survey of his character;

D. Assure the board that he is engaged in the practice of urology and that he intends to continue to be so engaged;

E. Membership in the American Medical Association, or comparable national medical society is recommended.

FEE

The examination fee will be $75. Fifteen dollars must accompany the application. Sixty dollars is to be paid when the applicant is accepted as a candidate for certification. This is the total expense to the candidate. If a candidate fails in his examination, he will be permitted a second examination after one year, or within three years, without additional fee, but he must give sixty days' notice of his intention to appear for reexamination. After an applicant has failed twice, he must file a new application blank accompanied by a second fee. If an applicant is lacking in any of the requirements as stated above, he will be considered ineligible for examination and classification and his fee will be returned. In no other instance, however, will a refund of the examination fee be possible.

REQUIREMENTS FOR CERTIFICATION

According to the By-laws of the American Board of Urology, Inc., applications received from applicants for certification shall be examined by the Credentials Committee and reviewed by the board. When additional data are required to complete the application, these will be requested by the secretary's office.

The requirements for certification include: personal appearance before the board; preparation of fifty case reports of major urological cases under the candidate's own supervision which must contain all items essential for diagnosis, therapy, prognosis, results of treatment, etc.; oral and clinical examinations; written examinations.

In specific instances, the board may waive any part of these requirements, with the exception of the item of personal appearance.

Each candidate will receive a notice of the time and place of the examinations, and an appointment for his personal appearance before the board.

EXAMINATIONS, WHERE HELD, AND REPORTS OF CASE HISTORIES

The board will hold one examination a year. This will be held at a time or place that the board may select or deem expedient.

1. The *written examinations* are designed to test the candidate's preparation in, and his knowledge of, the whole subject of urology, including the fundamental subjects: pathology, anatomy, physiology, embryology, bacteriology, physiological chemistry and endocrinology. The examination in pathology will consist of the identification of gross specimens and of sections of tissue observed through the microscope. The examination in anatomy, physiology, embryology, bacteriology, physiological chemistry, and endocrinology will be a test of the candidate's working knowledge of these subjects as they are related to the practice of urology.

2. The oral and clinical examinations will consist of discussions of common urologic conditions. The subjects forming the basis of the oral examinations are urography, diseases of the genital organs, including the prostate, diseases of the urinary bladder, and diseases of the ureters and kidneys. The oral examination may deal directly with the reports of case histories which the candidate has submitted. This examination will ascertain the candidate's familiarity with recent urologic literature, the breadth of his clinical experience, and his general qualifications as a specialist in urology. The applicant also will be examined in "professional adaptability" in an attempt to ascertain his attitude toward his fellow practitioners and his patients.

3. The *reports of fifty major urological cases* must be consecutive and must have been under the candidate's own supervision. They must not be abstracted. Sufficient data should appear in these so the examiner will know that a proper history was taken and that a thorough examination, including a complete physical survey, was made.

Case reports that are copied verbatim from a hospital record are not desired. They must be identified by the name of the hospital and the case admission numbers, with the pertinent dates. The reports must be typewritten (preferably on 8½ by 11 paper) and in duplicate, but need not be on any special forms.

The data should be placed under proper headings and the arrangement of these should conform to the sequence of events incidental to the patient's admission to the hospital or clinic, the examinations made and treatment prescribed.

Each candidate must assume personal responsibility for the data in his case reports, including autopsy findings and interpretations of urograms. If the reports are prepared by record clerks, interns, or fellows, they should be reviewed by the candidate and careful attention given to the spelling and the correct use of medical terms before submitting them to the secretary of the board. Case reports are documentary evidence of a candidate's method of practice, and the data in them and the manner in which these are presented reflect this.

Satisfactory case reports must be submitted before a candidate will be permitted to continue with other parts of his examination. If case reports are pronounced unsatisfactory by more than one examiner, the candidate will be informed of this and requested to prepare others. Criticisms and unsatisfactory reports will be sent to the candidate upon request.

Case reports must be submitted to the secretary of the board at least ninety days before the time set for the oral-clinical examination.

Although the board requires that all the essential points of the history and examination be given, as well as a complete description of the surgical procedure, emphasis should be placed on the following items: preoperative diagnosis; clinical and pathological diagnosis; summary of postoperative course with special reference to morbidity; clinical findings at time of discharge from the hospital and subsequent "follow-up" reports.

A final short paragraph must be prepared for each case by the candidate. These data must include the candidate's interpretation of the history in terms of pathology; the basis for the diagnosis; the facts that determined the treatment prescribed, whether surgical or otherwise; the course of treatment to be pursued following discharge from the hospital or clinic; a critical discussion of the knowledge gained from the proper handling of the case, or from the errors made (if any) in the diagnosis and method of treatment.

Complete separate index lists of the case history reports submitted must accompany the records. If the reports are obtained from more than one hospital they must be consecutive, as mentioned before, and a separate complete index list of each group of reports should be provided. These lists must state the operator's name at the head of each page, the name of the patient, the hospital and admission number, and the date of operation. The lists will be filed in the secretary's office for verification purposes.

Case reports will be reviewed by examiners living in localities other than those where the candidates practice.

FINAL ACTION

Final action is based on the applicant's training, his professional record, his attainments in the field of urology, and the results of the examinations. Any well trained urologist will have no difficulty in obtaining the board's certification. This board is organized not to prevent qualified urologists from obtaining certificates, but to assist them in becoming recognized in their communities as men competent to practice in the special field of urology.

The activities described in Articles IX and X of this pamphlet proceed from the certificate of incorporation in which is stated the nature of the business, objects, and purposes proposed to be transacted and carried out by this corporation.

REVOCATION OF CERTIFICATE

Certificates issued by this board are subject to the provisions of the Articles of Incorporation and the By-laws. According to Article IX, Section 4, of the By-laws, "each certificate may be revoked in the event that:

(a) The issuance of such certificate or its receipt by the physician so certified shall have been contrary to, or in violation of, any provision of the Certificate of Incorporation of this, the American Board of Urology, Inc., or of the By-laws; or

(b) The physician or party certified shall not have been eligible to receive such certificate, irrespective of whether or not the facts constituting him so ineligible were known to, or could have been ascertained by, the directors of the board at the time of the issuance of such certificate; or

(c) The physician or party so certified shall have made any misstatement of fact in his application for such certificate or in any other statement or representation to the board or its representatives; or

(d) The physician so certified, at any time while continuing to practice, shall cease to practice urology; or

(e) The physician so certified shall at any time have neglected to maintain the degree of competency in the practice of the specialty of urology as set up by the board, and shall refuse to submit to reexamination by the board.

The Board of Trustees of this Corporation shall have the sole power, jurisdiction and right, to determine and decide whether or not the evidence or information before it is sufficient to constitute one of the grounds for revocation of any certificate issued by this corporation, and the decision of such Board of Trustees in the premises shall be final."

Communications should be addressed to the secretary-treasurer.

THE AMERICAN BOARD OF PLASTIC SURGERY, INC.
A SUBSIDIARY OF THE AMERICAN BOARD OF SURGERY

JOHN STAIGE DAVIS, Chairman, Baltimore.
GEORGE M. DORRANCE, Vice-Chairman, Philadelphia.
VILRAY P. BLAIR, Secretary-Treasurer, 400 Metropolitan Building, St. Louis.
CONRAD BERENS, New York.
JAMES BARRETT BROWN, St. Louis.
ROBERT H. IVY, Philadelphia.
HAROLD L. D. KIRKHAM, Houston, Texas.
WILLIAM S. KISKADDEN, Los Angeles.
SUMNER L. KOCH, Chicago.
WILLIAM E. LADD, Boston.
GORDON B. NEW, Rochester, Minn.
GEORGE WARREN PIERCE, San Francisco.
ERNEST FULTON RISDON, Toronto, Ontario.
FERRIS SMITH, Grand Rapids, Mich.
JEROME P. WEBSTER, New York.

HISTORY

The aim of the American Board of Plastic Surgery is much the same as that outlined by the American Board of Surgery, namely, "to support a movement which it believes will ultimately raise the standards of qualified surgeons in this country and aid in improving opportunities for the training of the surgeon." A specific purpose of the board is to certify those plastic surgeons found to be qualified, after meeting reasonable requirements, for the protection of the public and the good of the specialty.

PURPOSES

The purposes of the board are:

1. To elevate and establish standards of fitness to practice plastic surgery.
2. To arrange and conduct examinations to test the qualifications of those who practice plastic surgery and to confer certificates upon those who meet the standards established by the board.
3. To improve and widen the existing opportunities for the training of the plastic surgeon.
4. To study and evaluate local and foreign teaching centers and opportunities for experience in and the study of plastic surgery.

REQUIREMENTS

1. Moral and ethical standing in the profession satisfactory to the board.
2. Membership in the American Medical Association or, by courtesy, membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association. Except as here provided, membership in other societies shall not be required.
3. Those who are adequately trained for and are doing acceptable work in the practice of plastic surgery in any field.
4. In exceptional instances the board may, in its discretion, accept for examination candidates who have met all preliminary requirements and have been in practice from six to sixteen years but whose formal training does not comply with the full requirements to be exacted in the future.

The board recognizes two groups of candidates who may be eligible for certification.

(A) The Founders Group—those who have already amply demonstrated their fitness as trained specialists in plastic surgery. Candidates from this group on invitation by the board, and those who voluntarily request, may make application, and on approval by the board and by the American Board of Surgery will be accepted without examination as qualified.

(B) Those qualified by examination.

PROFESSIONAL STANDING

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association or graduation from an approved foreign school.
2. Completion of an internship of not less than one year in a hospital approved by the said Council, or its equivalent, in the opinion of the board.
3. For all candidates applying for certification by this board in one or more special fields, preliminary certification from the certifying board or boards of these individual specialties shall be considered essential. For all candidates applying for certification in the general field of plastic surgery, preliminary certification by the American Board of Surgery will be essential, except as noted in paragraph (4) under Requirements.

SPECIAL TRAINING

For certification in the general field of plastic surgery, the following special training shall be required: A period of graduate study in surgery of not less than five years beyond the intern year, two years of which shall be devoted to plastic surgery, to be taken in a recognized graduate school or hospital, or under a sponsorship accredited by both the American Board of Surgery and the American Board of Plastic Surgery. This period of special training shall cover the technical and clinical phases of plastic surgery and the basic sciences of anatomy, physiology, pathology, bacteriology and biochemistry as they are related to plastic surgery. For candidates seeking certification in the general field of plastic surgery, this latter basic part of the preparatory work shall be approved by the American Board of Surgery before the candidate is eligible for examination by the American Board of Plastic Surgery.

For candidates for certification in special fields, preliminary certification by the related special board shall be accepted as evidence of basic training in that specialty, but shall not be accepted as evidence of adequate training in the conduct of anesthesia, control of hemorrhage, treatment of shock, in bacteriology, and in the care of surgical infection and accidents.

EXAMINATIONS

The qualifying examination will be divided into Part I, written, and Part II, oral and practical.

Nature of Examinations.—For the general plastic group, Part I shall consist of a written examination given by the American Board of Surgery. The examination of candidates in special fields without preliminary certification by the American Board of Surgery shall include questions upon the management of local and general anesthesia, shock, hemorrhage, surgical pathology, the handling of tissues and related bacteriology, surgical complications, etc., this examination to be given by the American Board of Plastic Surgery.

Part II as it applies to the general plastic field shall be that as conducted by the American Board of Surgery, it being understood that the clinical part of the examination shall be conducted by examiners appointed by the American Board of Plastic Surgery.

The clinical examination by the American Board of Plastic Surgery shall include any or all of the following:

(*a*) The exhibition of patients who have undergone or are undergoing treatment.

(*b*) Examination, diagnosis and presentation of a plan of correction by the applicant of cases provided by the examiners.

(*c*) Oral examination of the applicant and observations made in the operating room, treatment rooms and wards.

In order to be eligible for Part II of the examination, a candidate must have successfully passed Part I.

GRADES

A candidate shall be required to receive a passing average for each part in order to receive the board's certificate. No candidate shall pass Part I or Part II of the examination who does not receive a grade of 60 per cent or over in each subject of such a part. An average grade of 75 per cent shall be considered as passing.

REEXAMINATIONS

Candidates may be reexamined as often as they desire, provided that one year shall elapse between examinations, except in such cases as the board may, for good and sufficient reason, deny a candidate the priviilege of reexamination. Candidates shall be required to pay the fee for either Part I or Part II previous to each reexamination in these parts.

FEES

The fee for Group *A* (Founders' Group) shall be $25.

The fee for Group *B* shall be $75, payable as follows: $25 on registration; $25 for Part I of the examination, of which $10 shall go to the American Board of Surgery; $25 for Part II of the examination.

There shall be no refunds.

CERTIFICATE

A certificate attesting to a candidate's qualifications in plastic surgery after meeting the requirements will be issued by the board, having been signed by its officers.

REVOCATION OF CERTIFICATE

Any certificate issued by the board shall be subject to revocation by the board at any time in case it shall determine in its sole judgment that a candidate who has received a certificate either was not properly qualified to receive it or has become disqualified since its receipt.

Proper forms for making application and other information will be furnished by the secretary-treasurer.

AMERICAN BOARD OF NEUROLOGICAL SURGERY, INC.

HOWARD C. NAFFZIGER, Chairman, San Francisco.
ALFRED W. ADSON, Vice-Chairman, Rochester, Minn.
R. GLEN SPURLING, Secretary-Treasurer, 404 Brown Building, Louisville, Ky.
PAUL C. BUCY, Chicago.
WINCHELL MC.K. CRAIG, Rochester, Minn.
LEO M. DAVIDOFF, Brooklyn.
LOYAL DAVIS, Chicago.
TEMPLE S. FAY, Philadelphia.
MAX M. PEET, Ann Arbor, Mich.
TRACY J. PUTNAM, New York.
ERNEST SACHS, St. Louis, Mo.
BYRON STOOKEY, New York.

ORGANIZATION

Recognizing the need for detailed training and special qualifications for the practice of neurological surgery, representatives of both the Society of Neurological Surgeons and the Harvey Cushing Society held an informal meeting in Chicago on March 27, 1939, to consider the advisability of the formation of a national certification board. Later the group was enlarged by representatives from the Section on Nervous and Mental Diseases of the American Medical Association, the Section on Surgery of the American Medical Association, the American Neurological Association, and the American College of Surgeons. Approval of the board by the Advisory Board for Medical Specialties and the Council on Medical Education and Hospitals of the American Medical Association was given. The American Board of Neurological Surgery was incorporated in the State of Delaware on Aug. 1, 1940.

The membership of the corporation was nominated as follows: five from the Society of Neurological Surgeons, three from the Harvey Cushing Society, one each from the American College of Surgeons, the Section on Nervous and Mental Disease of the American Medical Association, the Section on Surgery of the American Medical Association, and the American Neurological Association.

PURPOSES

A. To encourage the study, improve the practice, elevate the standards and advance the science of neurological surgery and thereby to serve the cause of public health.

B. To grant and issue to physicians duly licensed by law, certificates or other recognition of special knowledge in neurological surgery and to suspend and revoke the same.

C. Certificates granted or issued by the corporation shall not confer or purport to confer on any person any legal qualification, privilege or license to practice neurological surgery, nor purport to be issued under or in pursuance to or by virtue of any statutory or governmental sanction or authority.

D. To determine by examination, investigation and otherwise the fitness and competence of specialists in neurological surgery who shall apply for certificates and to prepare, provide, control and conduct examinations, written, oral and otherwise, for such purpose and to determine the results of such examination.

E. To furnish to the public, hospitals, medical schools, medical societies and practitioners of medicine and surgery lists of neurological surgeons who from time to time have been granted certificates by this corporation.

GENERAL REQUIREMENTS

A. General qualifications.

1. Satisfactory moral and ethical standing in the profession.

2. License to practice medicine.

3. Membership in the American Medical Association or, by courtesy, membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association.

4. That the surgical activity of the applicant shall be limited to neurological surgery.

B. Professional education.

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association, or graduation from a foreign school which is acceptable to the American Board of Neurological Surgery, Inc.

C. Special training, to be effective Jan. 1, 1940.

1. Completion of a surgical internship of not less than one year in a hospital approved by the Council on Medical Education and Hospitals of the American Medical Association, or its equivalent in the opinion of the board.

2. A period of graduate study in a recognized graduate school of medicine of not less than three years beyond the intern year, or in an approved hospital or under a sponsorship acceptable to the American Board of Neurological Surgery, Inc., for the training of neurological surgeons. This period of special training shall be of such a character that the relation of the basic sciences of anatomy, physiology, pathology, bacteriology and biochemistry is emphasized. Knowledge of these sciences as applied to the practice of neurological surgery will be required in the examination.

3. An additional period of not less than two years in the practice of neurological surgery.

D. Certification without examination.

1. On invitation by the board and written application made within two years from Jan. 1, 1940, the following may be accepted as eligible for certification upon approval of the board of directors and on the production of evidence of satisfactory moral and ethical standing in the profession.

(*a*) Individuals of professorial rank in approved medical schools of the United States or Canada whose surgical practice is limited to neurological surgery.

(*b*) Those who have specialized in neurological surgery for ten years prior to Jan. 1, 1940.

APPLICATION BLANK AND FEE

Application must be made on the special form which may be procured from the secretary. The application and examination fee for candidates is $75 whether certified with or without examination. The completed application form should be returned to the secretary accompanied by an application fee of $25. When notified by the secretary that he is eligible for examination he shall send the examination fee of $50 to the secretary-treasurer at least two weeks before the date of examination. The application fee will be returned if the candidate is not accepted by the board for examination.

A candidate who has failed in one examination is eligible to reexamination in the subject, or subjects, in which he failed, within three years, on payment of a reexamination fee of $10. A candidate who has failed in one examination and who does not apply for reexamination within three years or a person who has applied within that time but who has failed a second time will be considered a new applicant.

EXAMINATIONS

Examinations will be held in the spring and fall of each year at or near the time and place of a national meeting at the discretion of the board. Examinations will be oral and based upon broad principles of neurological surgery. The subject matter of the examination will be divided into six parts: (1) neuroanatomy and neurophysiology, (2) neuropathology and bacteriology, (3) ophthalmology and x-ray diagnosis, (4) neurosurgical problems, (5) organic neurology and (6) general surgery.

The first examination will be held at the Neurological Institute, University of Illinois, 912 South Wood Street, Chicago, on Oct. 18 and 19, 1940.

All communications should be addressed to the secretary-treasurer.

ADVISORY BOARD FOR MEDICAL SPECIALTIES

Organized 1933-1934 to coordinate graduate education and certification of medical specialists in the United States and Canada.

This Board reports directly to its member groups, and functions in close cooperation with the Council on Medical Education and Hospitals of the American Medical Association and with the Advisory Council on Medical Education.

The work of this Board has been aided by grants from the Josiah Macy Jr. Foundation of New York, but the Board is now supported by its component groups.

OFFICERS AND EXECUTIVE COMMITTEE

WILLARD C. RAPPLEYE, President, New York.
WILLIAM P. WHERRY, Vice President, Omaha.
PAUL TITUS, Secretary-Treasurer, 121 South Highland Ave., Pittsburgh.
R. C. BUERKI, Chicago.
W. B. LANCASTER, Boston.

MEMBER ORGANIZATIONS AND REPRESENTATIVES
*(Corresponding Officer)

The Association of American Medical Colleges
STANLEY B. RYERSON, Toronto, Ontario.
*WILLARD C. RAPPLEYE, New York.

The American Hospital Association
*R. C. BUERKI, Chicago.
G. HARVEY AGNEW, Toronto, Ontario.

The Federation of State Medical Boards of the U. S. A.
G. M. WILLIAMSON, Grand Forks, N. D.
*WALTER L. BIERRING, Des Moines, Iowa.

The National Board of Medical Examiners
*J. STEWART RODMAN, Philadelphia.
WALLER S. LEATHERS, Nashville, Tenn.

The American Board of Ophthalmology
WALTER B. LANCASTER, Boston.
*JOHN GREEN, St. Louis.

The American Board of Otolaryngology
HARRIS P. MOSHER, Boston.
*WILLIAM P. WHERRY, Omaha.

The American Board of Obstetrics and Gynecology
JOSEPH L. BAER, Chicago.
*PAUL TITUS, Pittsburgh.

The American Board of Dermatology and Syphilology
HOWARD FOX, New York.
*C. GUY LANE, Boston.

The American Board of Pediatrics
BORDEN S. VEEDER, St. Louis.
*C. ANDERSON ALDRICH, Winnetka, Ill.

The American Board of Psychiatry and Neurology
FRANKLIN G. EBAUGH, Denver.
*WALTER FREEMAN, Washington, D. C.

The American Board of Radiology
A. C. CHRISTIE, Washington, D. C.
*BYRL R. KIRKLIN, Rochester, Minn.

The American Board of Orthopaedic Surgery
WILLIS C. CAMPBELL, Memphis, Tenn.
*FREMONT A. CHANDLER, Chicago.

The American Board of Urology
HERMAN L. KRETSCHMER, Chicago.
*GILBERT J. THOMAS, Minneapolis.

The American Board of Internal Medicine
ERNEST E. IRONS, Chicago.
*WILLIAM S. MIDDLETON, Madison, Wis.

The American Board of Pathology
A. H. SANFORD, Rochester, Minn.
*FRANK W. HARTMAN, Detroit.

The American Board of Surgery
ERWIN R. SCHMIDT, Madison, Wis.
*J. STEWART RODMAN, Philadelphia.

The American Board of Neurological Surgery
HOWARD NAFFZIGER, San Francisco.
*R. GLEN SPURLING, Louisville, Ky.

AFFILIATES OF AMERICAN BOARD OF SURGERY

The American Board of Anesthesiology
HENRY S. RUTH, Merion, Pa.
*PAUL M. WOOD, New York.

The American Board of Plastic Surgery
JOHN STAIGE DAVIS, Baltimore.
*VILRAY P. BLAIR, St. Louis.

MEMBER EMERITUS

LOUIS B. WILSON, Rochester, Minn.

The Advisory Board for Medical Specialties has prepared this booklet for the purpose of furnishing general information regarding its activities in connection with graduate medical education and the certification of medical specialists in the United States and Canada. It is designed also to give detailed information concerning the procedure to be followed by examining boards in the various specialties in order to obtain membership in this Advisory Board and official recognition by the Council on Medical Education and Hospitals of the American Medical Association. This information is based in large part on the experience of previously formed boards during the past twenty-three years.

Examining boards have now been organized, approved, and are actively functioning in the thirteen specialties recognized as suitable fields for the certification of specialists. Two of the more limited specialties, namely, anesthesiology and plastic surgery have examining boards as affiliates of the American Board of Surgery.

The Committee on Standards and Examinations of the Advisory Board and the Council on Medical Education and Hospitals of the American Medical Association express themselves as opposed to the organization of examining boards in any special field having less than one hundred in the United States engaged in the special practice in question.

ORGANIZATION

Several American Boards had been functioning actively and successfully for a number of years prior to the organization of the Advisory Board for Medical Specialties. Their purposes were, primarily, to establish minimum standards of graduate educational and training requirements for physicians representing themselves to the public as being specialists, with certification by the boards of candidates after they had been able successfully to pass the boards' examinations. Secondarily, these boards hoped to improve the general standards of graduate medical education and facilities for special training. This aim is being steadily and rapidly accomplished.

Credit for the improvement in undergraduate medical education, so noticeable in this country during the past twenty-five years, is due to the efforts of universities, educational foundations, medical schools, medical societies, and to public support along these lines. The same is true of the present transition in graduate education in the specialties, sharply stimulated by the establishment and activities of these certifying boards.

The American Board of Ophthalmology was the first special certifying board to be created in 1916; the American Board of Otolaryngology, established in 1924, was followed by the American Board of Obstetrics and Gynecology in 1930, and the American Board of Dermatology and Syphilology in 1932.

During part of this period of time plans for the organization of similar boards in other specialties were being actively projected, all of these groups being desirous of availing themselves of the experiences of the already existing boards.

It was soon recognized that some formal and official plan of organization must be established. It was clearly essential that an examining board must have the official sanction of the national societies in its given specialty as well as that of its section of the American Medical Association, but there was, at that time, nothing to prevent unofficial groups from organizing examining boards and using the title American Board.

Consequently, in order to avoid duplication of effort as well as to coordinate the work of the several boards and other interested groups into a concise and homogeneous plan for betterment, it was deemed advisable to create an Advisory Board which should give consideration to those problems common to all, and which should be representative of each organization concerned.

During the years 1933 and 1934 this Advisory Board was organized and began actively to function. Simultaneously at the Milwaukee session of the American Medical Association in 1933 a resolution was adopted authorizing the Council on Medical Education and Hospitals: (1) to formulate standards of administration based in general upon those of the American Boards of Ophthalmology, of Otolaryngology, of Obstetrics and Gynecology, and of Dermatology and Syphilology and, (2) to recognize officially new boards meeting these standards, this recognition to be based upon previous approval and recommendation to the Council by the Advisory Board.

A constitution and by-laws for the Advisory Board was adopted at a meeting in Chicago on February 11, 1934. The original member organizations of the Advisory Board for Medical Specialties were: the Association of American Medical Colleges; the American Hospital Association; the Federation of State Medical Boards of the U. S. A.; the National Board of Medical Examiners; the American Board of Ophthalmology; the American Board of Otolaryngology; the American Board of Obstetrics and Gynecology, and the American Board of Dermatology and Syphilology. Two representatives were appointed from each of these organizations to serve on the Advisory Board. Since that time the American Boards of Pediatrics, of Psychiatry and Neurology, of Radiology, of Orthopaedic Surgery, of Urology, of Pathology, of Internal Medicine, of Surgery, and of Neurological Surgery have been properly organized, approved, and elected to membership in the Advisory Board and recommended to the Council on Medical Education and Hospitals of the American Medical Association for official recognition. The American Board of Surgery now has two affiliate Boards (Anesthesiology and Plastic Surgery) functioning under its general direction and also represented in the Advisory Board.

PURPOSE

Article II of the Constitution states that, "This board shall act in an advisory capacity to such organizations as may seek its advice concerning the coordination of the education and certification of medical specialists." Specifically, this represents an official effort to advance the standards and improve the methods of graduate education and training in the medical specialties, with certification of men thus educated and trained who qualify as specialists in the various branches. The common interest of the member organizations in these purposes is obvious. It is equally apparent that some fixed definition of specialties needed to be established, preferably on a graduate educational basis, that minimum standards of organization and conduct for new examining boards should be fixed, and that some official method of recognition be developed.

There is no desire on the part of these boards to interfere with any practitioners of medicine in any of their regular or legitimate activities. Their fundamental purpose is to ensure to the public, both lay and medical, and for its protection, that physicians claiming to be specialists with presumably special proficiency in one or another branch of medicine actually possess the qualifications they claim. This presupposes special training and demonstrable capability along certain lines of work. Suitable evidence of this is the ability of an individual to satisfy an examining board about his training and then to pass the examination for certification.

The function of each member organization and the relationship of interests will be apparent from a review of the names of these committees and boards.

Preparations for providing medical school and hospital facilities for the required graduate training are going forward actively; surveys of existing facilities for assistant residencies and residencies are being made at the present time in the several specialties; previous activities in the various States respecting the issuance of licenses to specialists are being discussed with a view to their being coordinated with the present activities of the several specialty boards. Several of the American boards, in cooperation with the Council on Medical Education and Hospitals of the American Medical Association, are conducting surveys of institutions providing acceptable residencies and internships.

A Directory of Medical Specialists to include the names and biographic data of all men certified by the several specialty boards, as well as information regarding the organization and functions was published early in 1940. The first edition of the Directory contained the names and brief biographic records, including hospital and teaching appointments of more than 14,000 diplomates or certified specialists, and completely revised editions are to be issued every two years.

The Council on Medical Education and Hospitals of the American Medical Association has agreed, under the authority vested in it by the resolution passed at the Milwaukee meeting (1933) and referred to above, that applications of special examining boards for official approval are to be referred to the Council through the Advisory Board for Medical Specialties, recommendation by the Advisory Board for such approval to be based upon the standards mutually adopted. The understanding exists that the Council cannot be bound by recommendations of the Advisory Board but will consult the Advisory Board for Medical Specialties before acting upon any application so long as mutually adopted standards are in force.

In response to the generally recognized need for a clear formulation of the educational problems and principles involved in graduate and postgraduate medical training, the Advisory Board at its meeting in June 1937 voted to create a Commission on Graduate Medical Education to study the various aspects of the whole problem. This commission includes representatives of the profession, the specialties, the universities, the hospitals, and the licensing bodies. The results of the study contemplated should be of real assistance to the various specialty boards, hospitals, medical schools, and regulatory bodies dealing with this phase of American medicine.

MEMBERSHIP

The Advisory Board is composed of two representatives from each of the approved examining boards in the medical specialties and such other national organizations as are interested in education, examination, and certification of medical specialists and duly elected to this body.

The Constitution provides that, "To be eligible for representation in this board an examining board in a specialty must be composed of members elected from or appointed by societies recognized by this board as a national society in that specialty together with representation from the related section of the American Medical Association." Upon being accepted by the Advisory Board the Board in question is recommended to the Council on Medical Education and Hospitals of the American Medical Association as qualified for recognition. Membership in the Advisory Board provides for the inclusion of the name of the organization in all lists and directories published by the Advisory Board for Medical Specialties and provides also for publication of the names of specialists certified by each individual examining board.

Meetings of the Advisory Board for Medical Specialties are held annually as required.

Traveling and other expenses of representatives in attendance are borne by member organizations.

ESSENTIALS FOR APPROVED SPECIAL EXAMINING BOARDS

(Adopted by the Advisory Board for Medical Specialties, June 10, 1934)

I. ORGANIZATION

1. A special examining board to be approved by the Advisory Board for Medical Specialties should represent a recognized and distinct specialty of medicine. (It is agreed between the Council and the Advisory Board that no board shall be organized in a special field having less than one hundred members engaged in special practice in the United States.)

2. It should be composed of representatives of the national organizations in that specialty including the related section of the American Medical Association.

3. It should be incorporated.

4. A special board should:

(a) Determine whether candidates have received adequate preparation.

(b) Provide a comprehensive test of the ability and fitness of such candidates.

(c) Certify to the competence of those physicians who have satisfied its requirements.

II. DEFINITION OF SPECIAL FIELDS

The following branches of medicine at present are recognized as suitable fields for the certification of specialists:

1. Internal Medicine
2. Surgery
3. Pediatrics
4. Obstetrics and Gynecology
5. Ophthalmology
6. Otolaryngology
7. Dermatology and Syphilology
8. Psychiatry and Neurology
9. Urology
10. Orthopaedic Surgery
11. Radiology
12. Pathology

III. QUALIFICATION OF CANDIDATES

Each applicant for admission to the examination should be required to present evidence that he has met the following standards:

A. General Qualifications.

1. Satisfactory moral and ethical standing in the profession.

2. Membership in the American Medical Association or membership in such Canadian or other medical societies as are recognized for this purpose by the Council on Medical Education and Hospitals of the American Medical Association is recommended. Membership in other societies should not be required. (Exceptions to the foregoing may now be made at the discretion of any individual board for good and sufficient reasons.)

B. Professional Standing.

1. Graduation from a medical school of the United States or Canada recognized by the Council on Medical Education and Hospitals of the American Medical Association.

2. Completion of an internship, preferably of the general rotating type, of not less than one year in a hospital approved by the same Council.

C. Special Training.

(To be effective as far as practical not later than January 1, 1942.)

1. A period of study, after the internship, of not less than three years in clinics, dispensaries, hospitals or laboratories recognized by the same Council as competent to provide a satisfactory training in the special field of study.

2. This period of specialized preparation should include:

(a) Graduate training in anatomy, physiology, pathology, and the other basic medical sciences which are necessary to the proper understanding of the specialty in question.

(b) An active experience of not less than eighteen months in hospital clinics, dispensaries and diagnostic laboratories recognized by the Council as competent in the specialty.

(c) Examinations in the basic medical sciences of a specialty as well as in the clinical, laboratory and public health aspects.

3. An additional period of not less than two years of study and/or practice.

The foregoing report is practically identical with an outline of Essentials for Approved Specialty Boards adopted June 10, 1934, by the Council on Medical Education and Hospitals of the American Medical Association and ratified June 11, 1934, by the House of Delegates of the American Medical Association.

ORGANIZATION OF EXAMINING BOARDS

The foregoing essentials for approved special examining boards and their affiliate boards were followed in the organization of the existing boards.

Official sponsorship of the national societies, and the related section of the American Medical Association, in a specialty organizing an examining board, has included the election or appointment of representatives from each of these national societies to serve on the board as examiners and directors.

Each board was or is incorporated. Each application for organization and approval included:

1. The name of the proposed board.
2. A statement of its method of organization, the sponsoring societies, its list of officers, and the names and addresses of the elected or appointed members of the board, including the societies which each represents.
3. A copy of the tentative constitution and by-laws.
4. A copy of its proposed articles of incorporation.
5. An outline of qualification requirements for applicants.
6. An outline of proposed methods of examination.
7. A copy of the application blank.
8. Any general information or statement of importance.
9. Approximate number of physicians practicing the specialty which the Board represents.

These data are submitted in duplicate to the office of the Secretary of the Advisory Board for Medical Specialties.

An application for election to membership in the Advisory Board and the data listed above are referred immediately for review by the Committee on Standards and Examinations of the Advisory Board. Upon approval by the Committee incorporation is then completed and a statement of this filed with the Secretary. Action on the application will be taken at the succeeding meeting of the Advisory Board for Medical Specialties and each examining Board as elected will be recommended to the Council on Medical Education and Hospitals of the American Medical Association for official recognition. One of the two sets of data submitted is forwarded to the Council on Medical Education and Hospitals of the American Medical Association with the Advisory Board's recommendations. Examination and certification of applicants in the specialty may begin immediately upon the special board being given such approval.

Communications should be addressed to the secretary.

CONSTITUTION AND BY-LAWS

Adopted at Organization Meeting, February 11, 1934

ARTICLE I

NAME

The name of this organization shall be "The Advisory Board for Medical Specialties."

ARTICLE II

PURPOSE

This board shall act in an advisory capacity to such organizations as may seek its advice concerning the coordination of the education and certification of medical specialists. No action taken by this Board shall be binding upon any member organizations.

ARTICLE III

MEMBERSHIP

Section I

This board shall be composed of two representatives from each of the examining boards of the medical specialties and such other national organizations as are interested in education, examination, or certification of medical specialists.

Section II—Original Membership

At the time of the organization, this board shall be composed of representatives from each of the following bodies:

The American Board of Ophthalmology.
The American Board of Otolaryngology
The American Board of Obstetrics and Gynecology
The American Board of Dermatology and Syphilology
The Association of American Medical Colleges
The National Board of Medical Examiners
The Federation of State Medical Boards of the U. S. A.
The American Hospital Association
The Council on Medical Education and Hospitals of the American Medical Association

Section III—Additional Membership

To be eligible for representation in this board an examining board in a specialty must be composed of members elected from or appointed by Societies recognized by this Board as National Societies in that specialty together with representation from the related Section of the American Medical Association. Upon being accepted by this Advisory Board the board in question will be recommended to the American Medical Association as being qualified for recognition by that Association.

Section IV—Quorum

A quorum at any meeting shall consist of a majority of the official representatives to the board and at least one-third of the membership organizations shall be represented. Each member organization shall be entitled to two votes.

ARTICLE IV

OFFICERS AND STANDING COMMITTEES

Section I—Officers

The officers of this board shall be (a) President, (b) Vice President, (c) Secretary-Treasurer. These officers shall be elected at the annual meeting each year.

Section II—Standing Committees

The standing committees shall be as follows:

1. The Executive Committee
2. Standards and Examinations
3. Finance

The Executive Committee shall consist of the President, Vice President, Secretary-Treasurer, and two members elected at the annual meetings. No organization should have more than one member on the Executive Committee. The President shall be the Chairman of the Executive Committee. The other standing committees shall be appointed by the President.

ARTICLE V

AMENDMENTS TO THE CONSTITUTION

Amendments to this constitution may be made by a majority vote of the official representatives present at any annual meeting provided that thirty days' notice of the proposed amendment has been given each member of the board.

BY-LAWS

ARTICLE I

DUTIES OF OFFICERS

Section I

The President shall preside at all meetings of the board, shall act as Chairman of the Executive Committee, and shall appoint all other standing committees. He shall call meetings of the Executive Committee at such time and place as may be deemed necessary.

Section II

The Vice President shall assume the duties of the President in his absence.

Section III

The Secretary-Treasurer shall perform the usual duties of this office.

ARTICLE II

EXECUTIVE COMMITTEE

The Executive Committee shall carry out the policies and activities decided upon by the board. It shall have ad interim authority to initiate policies subject to approval by the board at the annual or any special meeting. The two elected members shall serve for two years, the terms of office terminating in alternate years.

ARTICLE III

MEETINGS

Section I

There shall be an annual meeting at such time and place as the board may determine. A special meeting may be called by the president upon ten days' notice to all members stating time, place and purpose of such meetings. The Executive Committee may present other business for consideration.

Section II

The Executive Committee shall meet subject to the call of the President.

Section III

Robert's Rules of Order shall be followed except where they conflict with this Constitution and By-Laws.

ARTICLE IV

AMENDMENTS TO THE BY-LAWS

Amendments to these by-laws may be made at any regular or special meeting of the board.

HOSPITALS APPROVED FOR TRAINING INTERNS

By the Council on Medical Education and Hospitals of the American Medical Association

The following general hospitals are considered in position to furnish acceptable internships of at least one year duration. They are also accredited for mixed residencies, which represent general assignments following an approved intern service.

The + sign indicates additional approval for residencies in specialties.

HOSPITALS, 732. INTERNSHIPS, 6,791

Capacity, 244,257 Beds

The terms used in the column "Type of Internship" are defined as follows:

1. A full rotating internship provides training in medicine, surgery, pediatrics, obstetrics, pathology and radiology. (X-ray and laboratory duties may be combined with clinical services or constitute separate assignments.)

2. A mixed or limited rotating internship covers more than one of the clinical specialties but does not include all of the divisions listed above.

3. A straight internship is an assignment limited to a single department but may include the subspecialties of the same branch. Straight internships are now approved in the divisions of medicine, surgery, pediatrics and pathology.

ABBREVIATIONS

Army	United States Army	Frat	Fraternal	Part	Partnership
CyCo	City and County	Indiv	Individual	Req	Required
Corp	Corporation unrestricted as to profit	M	Mixed	R	Rotating
		NPAssn	Nonprofit association	S	Straight
Fed	Federal	Op	Optional	USPHS	United States Public Health Service

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Percentage of Patients: Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
ALABAMA															
Hillman Hospital [3]+	Birmingham	County	477	100	100	12,854	R	10	24	July	No	Req 23	(c)		Nov
Norwood Hospital	Birmingham	Church	226	3	60	5,389	R	3	12	July	No	Req 26	$50		Dec
Employees' Hospital of the Tennessee Coal, Iron and Railroad Company+	Fairfield	NPAssn	291	..	..	6,949	R	12	12	July	No	Req 50	$25		Nov
City Hospital	Mobile	CyCo	146	25	75	3,620	R	5	12	July	No	Req 50	$45		Nov
ARIZONA															
Good Samaritan Hospital	Phoenix	Church	185	13	..	4,532	R	3	12	July	No	None 24	$25		Nov
St. Joseph's Hospital [1]	Phoenix	Church	228	5	35	7,249	R	6	12	July	No	None 35	$30		Nov
ARKANSAS															
Baptist State Hospital+	Little Rock	Church	315	23	40	4,713	R	4	12	July	No	None 34	$25		Nov
St. Vincent's Infirmary	Little Rock	Church	233	25	65	4,680	R	5	12	June	No	None 21	$25		Dec
University Hospital [1]	Little Rock	State	260	100	100	2,552	R	8	12	July	No	Req 62	$25		Nov
CALIFORNIA															
General Hospital of Fresno County+	Fresno	County	522	100	100	7,898	R	12	12	July	No	Req 34	$25		Nov
Glendale Sanitarium and Hospital [1]	Glendale	Church	212	33	*	3,296	R	4	12	July	No	Req 28	$50(a)		Nov
Loma Linda Sanitarium and Hospital [1]	Loma Linda	Church	124	2	6	2,826	R	4	12	July	(4)	Req 29	$53.30(a)		Oct
California Hospital [1]	Los Angeles	Church	292	8	100	8,097	R	13	12	JanJuly	(5)	Req 29	$25		Nov
Cedars of Lebanon Hospital [1]+	Los Angeles	NPAssn	288	29	29	7,681	R	14	12	July	(6)	Req 34	$20		Nov
Los Angeles County Hospital [1,3]+	Los Angeles	County	3,438	100	100	50,715	R	63	24	July	No	Req 51	$10		Nov
Presbyterian Hospital—Olmsted Memorial	Los Angeles	NPAssn	315	1	*	7,640	R	5	12	July	No	Op 30	$25		Nov
Queen of Angels Hospital	Los Angeles	Church	350	..	100	7,670	R	10	12	July	No	Req 24	$30		Dec
St. Vincent's Hospital+	Los Angeles	Church	265	..	..	7,305	R	6	12	July	(6)	None 40	$40		Dec
Santa Fe Coast Lines Hospital	Los Angeles	NPAssn	150	..	*	2,607	R	6	12	July	(7)	Req 68	$25		Dec
White Memorial Hospital [1]+	Los Angeles	Church	204	3	49	7,024	R	16	12	July	No	Req 47	$44(a)		Nov
United States Naval Hospital	Mare Island	Navy	496	82	82	2,948	R	..	12	July	No	Req 63	(b)		.....
Alameda County Hospital [1,3]+	Oakland	County	388	92	100	12,513	R	18	12	July	(8)	Req 61	$20		Nov
Orange County Hospital [1]	Orange	County	375	86	100	3,584	R	9	12	July	No	Req 47	$15-20		Dec
Collis P. and Howard Huntington Memorial Hospital+	Pasadena	NPAssn	198	6	8	5,850	R	5	12	JanJuly	(130)	Req 69	$25		Oct
Sacramento County Hospital	Sacramento	County	500	100	100	8,821	R	12	12	July	No	Req 45	$35		Dec
San Bernardino County Charity Hospital+	San Bernardino	County	357	100	100	3,895	R	9	12	July	No	Req 54	$25		Nov
San Diego County General Hospital [3]+	San Diego	County	695	100	100	9,358	R	14	12	July	No	Req 38	$20		Nov
United States Naval Hospital	San Diego	Navy	1,000	100	100	6,592	R	8	12	Aug	(9)	Req 76	(b)		July
Franklin Hospital [1]	San Francisco	NPAssn	241	1	25	5,264	R	8	12	July	No	Req 40	$25		Nov
French Hospital+	San Francisco	Frat	220	1	69	3,720	R	7	12	July	No	Req 48	$25(d)		Nov
Hospital for Children [3]+	San Francisco	NPAssn	232	4	100	5,854	R	9	12	July	No	Req 39	$50 yr		Jan
Letterman General Hospital	San Francisco	Army	610	100	100	7,089	R	†	12	July	No	Req ..	$60		.....
Mary's Help Hospital+	San Francisco	Church	142	4	11	3,345	R	5	12	July	No	Req 27	$25		Jan
Mount Zion Hospital [1,3]+	San Francisco	NPAssn	189	18	26	3,984	R	12	12	June	No	Req 65	$15		Dec
St. Luke's Hospital [1]+	San Francisco	Church	225	20	50	5,191	R	4	12	July	No	Op 54	$15		Nov
St. Mary's Hospital	San Francisco	Church	325	3	19	10,255	R	8	12	July	No	Req 23	$25		Oct
San Francisco Hospital [1,3]+	San Francisco	CyCo	1,308	100	100	15,803	R	52	12	July	(10)	Req 57	$10		Nov
Southern Pacific General Hospital	San Francisco	NPAssn	400	..	*	5,340	R	15	12	July	(11)	Req 38	$30		Oct
Stanford University Hospitals [1]+	San Francisco	NPAssn	324	2	50	9,037	S	15	12	July	No	Req 57	No		Dec
United States Marine Hospital [3]	San Francisco	USPHS	478	100	100	4,647	R	12	12	July	(12)	Op 57	$62.50		Jan
University of California Hospital [1]+	San Francisco	State	303	58	58	7,286	S	23	12	July	No	Req 77	$50 yr		Dec
Santa Clara County Hospital+	San Jose	County	547	100	100	7,382	R	8	12	July	No	Req 25	$20(d)		Jan
St. Francis Hospital	Santa Barbara	Church	100	17	..	1,818	R	4	12	July	(13)	Req 72	$15		Feb
Santa Barbara Cottage Hospital	Santa Barbara	NPAssn	201	3	..	3,236	R	5	12	July	No	Op 56	$20		Nov
Santa Barbara General Hospital	Santa Barbara	County	297	98	100	2,632	R	6	12	July	No	Req 72	$15		Nov
COLORADO															
Boulder-Colorado Sanit. and Hospital [1]	Boulder	Church	107	4	100	1,144	R	2	12	July	(14)	Req 30	$35		Jan
Beth-El General Hospital and Sanatorium [1]	Colorado Springs	Church	217	25	..	2,245	R	3	12	July	No	None 28	$25		Jan
St. Francis Hospital and Sanatorium	Colorado Springs	Church	161	15	10	1,642	R	2	12	July	No	None 36	$25		Jan
Colorado General Hospital [1]+	Denver	State	265	57	100	3,763	R	12	12	JulyAug	No	Req 80	$20		Nov
Denver General Hospital+	Denver	CyCo	572	100	100	7,763	R	10	18	JanJuly	No	Req 95	$30		Varies

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
COLORADO—Continued															
Mercy Hospital	Denver	Church	235	10	7	6,655	R	5	12	July	No	Req	28	$25	Sept
Presbyterian Hospital	Denver	Church	175	16	11	4,546	R	5	12	July	No	Req	29	$25	Nov
St. Anthony Hospital	Denver	Church	184	7	100	5,146	R	3	12	July	No	None	26	$25	Jan
St. Joseph's Hospital	Denver	Church	274	..	..	5,333	R	6	12	July	No	Req	25	$25	Nov
St. Luke's Hospital+	Denver	Church	259	3	80	6,673	R	8	12	July	No	None	42	$25	Nov
CONNECTICUT															
Bridgeport Hospital	Bridgeport	NPAssn	400	38	47	10,583	R	10	12	July	No	None	43	$10	Dec
St. Vincent's Hospital	Bridgeport	Church	325	45	95	7,343	R	8	12	July	No	Req	30	$30	Dec
Danbury Hospital	Danbury	NPAssn	180	2	75	3,324	R	4	12	July	No	Req	36	$40	Jan
Hartford Hospital [3]+	Hartford	NPAssn	764	3	..	16,015	R	12	24	July	No	None	48	No	Nov
Municipal Hospitals [3]+	Hartford	City	354	100	100	4,772	R	6	24	July	No	Req	34	$10	Nov
St. Francis Hospital [3]	Hartford	Church	638	15	33	14,416	R	10	12	July	No	Req	25	No	Nov
Meriden Hospital [1]	Meriden	NPAssn	140	8	42	2,498	R	4	12	July	No	Req	40	$30	March
Middlesex Hospital	Middletown	NPAssn	194	5	43	3,287	R	3	12	July	No	None	29	$20(e)	Jan
New Britain General Hospital	New Britain	NPAssn	257	22	81	4,941	R	6	12	July	No	Op	27	$30	Dec
Grace Hospital+	New Haven	NPAssn	271	18	52	6,318	R	5	24	July	No	Req	51	$10	Nov
Hospital of St. Raphael	New Haven	Church	280	25	*	6,704	R	4	24	July	No	Op	33	$30	Dec
New Haven Hospital [1,3]+	New Haven	NPAssn	581	37	70	9,765	M&S	27	12-20	(f)	No	Req	71	No	Dec
Lawrence and Memorial Associated Hospitals	New London	NPAssn	241	23	35	3,523	R	4	12	July	No	Req	33	$22.50	Dec
Norwalk General Hospital	Norwalk	NPAssn	196	16	12	5,666	R	5	12	JanJuly	No	Op	53	$50	Oct
William W. Backus Hospital	Norwich	NPAssn	155	5	41	3,373	R	3	12	July	No	Op	44	$25	March
Stamford Hospital	Stamford	NPAssn	289	39	77	8,400	R	6	18	JanJuly	No	Req	36	$35	Dec
St. Mary's Hospital [3]	Waterbury	Church	264	11	50	8,920	R	6	12	July	No	Req	39	$25	Oct
Waterbury Hospital	Waterbury	NPAssn	336	15	60	6,751	R	7	12	JulyOct	No	Req	42	$25	Dec
DELAWARE															
Delaware Hospital	Wilmington	NPAssn	225	51	100	4,673	R	7	12	July	No	Req	29	$25	Jan
Memorial Hospital+	Wilmington	NPAssn	242	34	60	4,475	R	6	12	July	No	Req	29	$25	Dec
St. Francis Hospital	Wilmington	Church	135	47	40	2,049	R	3	12	July	No	Req	40	$25	Jan
Wilmington General Hospital	Wilmington	NPAssn	188	40	65	4,244	R	6	12	July	No	Req	40	$15(g)	Jan
DISTRICT OF COLUMBIA															
Central Disp. and Emergency Hospital +..	Washington	NPAssn	280	22	*	7,255	M	13	12	June	No	Req	46	$10	Nov
Freedmen's Hospital [1,3]+	Washington	USPHS	376	85	85	6,501	R	16	12	JulyOct	No	Req	44	$10	Dec
Gallinger Municipal Hospital [3]+	Washington	City	1,220	99	99	15,589	R	30	12	July	No	Op	38	$10	Dec
Garfield Memorial Hospital [1,3]+	Washington	NPAssn	432	..	30	10,620	R	12	12	July	No	Req	51	$10(e)	Dec
Georgetown University Hospital [3]+	Washington	NPAssn	261	6	26	6,586	R	5	24	July	(15)	Req	35	$10	Dec
George Washington University Hospital [1]..	Washington	NPAssn	114	40	40	2,695	R	5	12	July	No	Req	50	$15	Dec
Providence Hospital [3]+	Washington	Church	290	25	40	7,029	R	6	24	July	No	Req	29	$10	Nov
St. Elizabeths Hospital, Medical and Surgical Department [1,3]	Washington	USPHS	454	100	100	1,706	R	6	24	MarJulyNov	(16)	Req	69	(b)	Feb
Sibley Memorial Hospital [3]+	Washington	Church	463	6	..	8,310	R	9	12	July	No	Req	50	$20	Nov
United States Naval Hospital	Washington	Navy	178	100	100	1,814	R	..	12	July	No	Req	61	(b)	.....
Walter Reed General Hospital +	Washington	Army	1,296	100	100	8,406	R	†	12	July	No	Req	..	$60	.....
Washington Sanitarium and Hospital, Takoma Park	Washington	Church	188	11	90	3,206	R	4	12	July	No	Req	39	$60(a)	Oct
FLORIDA															
Duval County Hospital +	Jacksonville	County	240	100	100	4,915	R	6	12	July	No	Req	64	$15	Nov
St. Luke's Hospital	Jacksonville	NPAssn	200	16	75	5,312	R	5	12	July	No	None	26	$25	Nov
St. Vincent's Hospital	Jacksonville	Church	240	25	..	5,959	R	5	12	July	No	None	28	$30	Nov
James M. Jackson Memorial Hospital [3]+..	Miami	City	500	54	..	14,648	R	14	12	July	No	Req	29	$30	Dec
GEORGIA															
Crawford W. Long Memorial Hospital [1]....	Atlanta	NPAssn	210	..	..	5,472	R	5	12	July	No	None	24	$40	Jan
Georgia Baptist Hospital	Atlanta	Church	184	..	..	7,252	R	7	12	July	(17)	None	15	$15(h)	Nov
Grady Hospital [3]+	Atlanta	City	646	100	100	21,274	R	32(j)	12	July	No	Req	29	$10	Nov
Piedmont Hospital +	Atlanta	NPAssn	164	..	..	4,124	R	5	12	July	No	None	36	$35	Dec
St. Joseph's Infirmary +	Atlanta	Church	156	10	10	4,444	R	3	12	July	No	Req	37	$75	Dec
University Hospital [3]+	Augusta	City	345	29	43	8,057	R	13	12	July	No	Req	39	$10(d)	Nov
Columbus City Hospital	Columbus	City	200	60	..	4,341	R	3	12	July	No	Req	31	$50	Jan
Emory University Hospital +	Emory University	NPAssn	259	16	16	6,711	R	8	12	July	(17)	Req	45	$30	Nov
Macon Hospital	Macon	CyCo	208	73	..	5,866	R	8	12	July	No	Req	22	$25	Jan
ILLINOIS															
St. Joseph's Hospital	Alton	Church	135	10	..	3,046	R	3	12	July	(18)	Req	30	$25(l)	Jan
Alexian Bros. Hosp. (male patients only)	Chicago	Church	252	8	8	4,009	R	7	12	July	(19)	None	30	$50	Dec
American Hospital [1]	Chicago	NPAssn	170	14	50	3,076	R	4	12	July	No	None	41	No	May
Augustana Hospital +	Chicago	Church	300	15	25	5,649	M	6	18	JanJuly	No	Req	42	No	Sept Feb
Belmont Community Hospital	Chicago	NPAssn	125	5	1	2,294	R	4	12-18	July	No	None	39	$50	Jan
Chicago Memorial Hospital	Chicago	NPAssn	108	25	..	2,340	R	5	12	JanAprJuly	No	Req	53	$25	Varies
Columbus Hospital	Chicago	Church	165	17	25	3,630	R	4	12	July	No	None	84	$25	Jan
Cook County Hospital [1,3]+	Chicago	County	3,525	100	100	79,795	R	68	18	JuneDec	No	Req	19	No	Jan
Edgewater Hospital	Chicago	NPAssn	145	16	100	4,280	R	5	12	JanJuly	No	None	30	$25	JuneDec
Englewood Hospital	Chicago	NPAssn	126	10	50	3,807	R	6	12	JanJuly	No	Req	41	$25	JuneDec
Evangelical Hospital [1]	Chicago	Church	235	7	..	6,774	R	6	12	July	No	None	23	$25	Jan
Garfield Park Community Hospital	Chicago	NPAssn	182	2	100	4,749	R	6	12	July	No	Req	19	$25	Varies
Grant Hospital +	Chicago	NPAssn	260	5	15	6,823	R	9	12	July	No	Req	25	(k)	Nov
Henrotin Hospital [1]	Chicago	NPAssn	120	25	50	2,812	R	4	12	JanJuly	No	None	52	No	12moadv
Holy Cross Hospital	Chicago	Church	171	18	100	4,592	R	5	12	July	No	None	39	$25	Jan
Hospital of St. Anthony de Padua [1]	Chicago	Church	233	50	9	5,977	R	9	18	JanJuly	No	Req	21	$25	JanJuly
Illinois Central Hospital	Chicago	NPAssn	290	1	60	5,131	M	9	12	Quarterly	No	Req	25	No	Quarterly
Illinois Masonic Hospital [1]	Chicago	Frat	184	33	33	3,831	R	5	12	JanJuly	No	Req	38	No	.....
Jackson Park Hospital	Chicago	Corp	222	..	100	3,408	R	6	12	July	No	Req	37	$10	Jan
Loretto Hospital [1]	Chicago	Church	163	15	100	2,868	R	6	12	July	No	None	42	$25	Jan
Lutheran Deaconess Home and Hospital [1]	Chicago	Church	218	18	20	5,406	R	6	12	July	No	None	41	$15	Jan
Mercy Hospital—Loyola University Clinics +	Chicago	Church	305	26	100	6,544	R	10	12	July	No	Req	44	No	Nov
Michael Reese Hospital +	Chicago	NPAssn	668	43	..	17,570	R	20	12&24	JanJuly	(20)	Req	59	No	Nov
Mother Cabrini Memorial Hospital	Chicago	Church	140	32	50	3,247	R	4	12	July	No	None	28	$25	Jan
Mount Sinai Hospital [3]+	Chicago	NPAssn	220	35	100	7,268	R	9	12	June	No	Op	50	No	Jan
Norwegian-American Hospital [3]+	Chicago	NPAssn	173	..	100	3,921	R	6	12	July	No	None	36	$25	Fall

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
ILLINOIS—Continued															
Passavant Memorial Hospital [1]✦	Chicago	NPAssn	220	14	50	5,043	R	9	12	JanAprSept	No	Req 79	No		6monadv
Presbyterian Hospital [1,2]✦	Chicago	Church	412	13	50	11,814	M&S	19	12-30	(n)	No	Op 57	No		Quarterly
Provident Hospital [1]✦	Chicago	NPAssn	160	62	62	4,284	R	7	12	JulySept	No	Req 43	$10		Jan
Ravenswood Hospital✦	Chicago	NPAssn	233	3	10	6,002	R	6	12	July	No	None 27	$25		Jan
Research and Educational Hospital [1]✦	Chicago	State	499	100	100	5,831	R	14	12&18	JanJuly	No	Op 86	No		Dec
St. Anne's Hospital	Chicago	Church	300	7	..	7,899	R	8	12	June	No	None 36	$15		Dec
St. Bernard's Hospital [1]	Chicago	Church	208	25	25	6,501	R	6	12	July	No	None 24	$25		Quarterly
St. Elizabeth Hospital	Chicago	Church	302	3	15	6,147	R	6	12	July	No	None 30	$15		Nov
St. Joseph Hospital✦	Chicago	Church	200	5	50	3,754	R	8	12	July	No	Req 40	No		Varies
St. Luke's Hospital [1]✦	Chicago	NPAssn	659	7	..	12,100	R	16	24	July	No	Req 73	No		Nov
St. Mary of Nazareth Hospital [1]	Chicago	Church	260	19	32	6,473	R	6	12	July	No	None 25	$10(o)		Jan
South End Hospital	Chicago	Corp	120	10	10	2,936	R	4	12	JanJuly	No	None 35	$50		Jan
South Shore Hospital	Chicago	Corp	150	8	10	2,449	R	3	12	JanJuly	No	None 27	$40(e)		Oct
Swedish Covenant Hospital [1]	Chicago	Church	227	2	..	4,689	R	7	12	July	No	Req 26	$20		Varies
United States Marine Hospital [2]	Chicago	USPHS	301	100	100	2,738	R	6	12	July	(21)	Op 59	$62.50		Jan
University Hospital	Chicago	NPAssn	121	36	25	4,433	R	4	12	July	No	Req 46	$15		Jan
University of Chicago Clinics [1,2]✦	Chicago	NPAssn	682	36	100	10,776	S	46	12	JanJuly	No	Req 73	No		NovJuly
Walther Memorial Hospital [1]	Chicago	Church	236	5	5	4,668	R	6	12	July	No	None 19	$25		Varies
Washington Boulevard Hospital	Chicago	NPAssn	110	15	100	2,201	R	6	18	Quarterly	No	Req 33	No		Quarterly
Wesley Memorial Hospital [1]✦	Chicago	Church	262	15	31	3,232	R	7	12	JanJuly	No	None 58	No		Feb
Women and Children's Hospital [2]	Chicago	NPAssn	150	19	29	2,442	R	6	12	JanJuly	No	Req 62	No		Nov
Woodlawn Hospital	Chicago	NPAssn	107	4	..	3,148	R	5	12	JanJuly	No	None 43	$25		.....
St. Mary's Hospital [1]	East St. Louis	Church	295	20	..	5,120	R	6	12	July	No	None 39	$25		Dec
Evanston Hospital✦	Evanston	NPAssn	200	16	95	9,221	R	12	18	(n)	No	Req 78	No		Spr Fall
St. Francis Hospital✦	Evanston	Church	353	4	100	9,292	R	9	12	July	No	None 44	$20(d)		Nov
Little Company of Mary Hospital	Evergreen Park	Church	207	3	70	5,455	R	5	12	July	No	None 24	$25		Nov
St. Joseph's Hospital	Joliet	Church	264	10	75	5,561	R	6	12	July	No	None 33	$30		Nov
Moline Public Hospital [1]	Moline	City	165	5	90	4,195	R	3	12	JanJuly	(22)	Req 25	$50(e)		SprFall
Oak Park Hospital [1]	Oak Park	Church	170	3	3	4,750	R	6	12	July	No	None 26	$35		Jan
West Suburban Hospital	Oak Park	NPAssn	412	7	..	8,842	R	12	12	AprilJuly	No	Req 37	No		6monadv
Methodist Hospital of Central Illinois✦	Peoria	Church	240	5	*	6,226	R	12	12	July	No	None 32	$25		Jan
St. Francis Hospital [1]	Peoria	Church	402	3	18	9,255	R	8	12	JanJuly	No	None 27	$25		Nov
St. Mary's Hospital	Quincy	Church	215	6	..	4,425	R	3	12	July	No	None 31	$25		Jan
St. Anthony Hospital	Rockford	Church	261	10	..	4,959	R	4	12	July	(23)	None 33	$25		Dec
St. Anthony's Hospital	Rock Island	Church	224	33	80	2,724	R	2	12	July	No	Op 32	$25(h)		Jan
INDIANA															
St. Catherine's Hospital	East Chicago	Church	312	18	..	5,810	R	7	12	July	No	None 16	$25		Jan
Lutheran Hospital	Fort Wayne	Church	190	..	..	4,016	R	3	12	July	No	None 23	$25(p)		Dec
Methodist Hospital [1]	Gary	Church	115	10	*	3,236	R	3	12	July	No	None 24	$30		March
St. Mary's Mercy Hospital	Gary	Church	252	23	..	7,200	R	8	12	June	No	None 33	$25		Nov
St. Margaret Hospital	Hammond	Church	265	2	..	5,110	R	10	12	July	No	None 27	$30		Oct
Indianapolis City Hospital [1,2]✦	Indianapolis	City	718	95	95	11,671	R	23	24	July	No	Req 63	$10		Dec
Indiana University Medical Center [1,2]✦	Indianapolis	State	604	80	83	9,790	R	24	12	July	No	Req 60	$12.50		Nov
Methodist Hospital✦	Indianapolis	Church	579	5	75	23,917	R	22	12	July	No	None 32	$10		Nov
St. Vincent's Hospital	Indianapolis	Church	328	..	*	6,873	R	11	12	July	No	None 18	$15		Dec
Ball Memorial Hospital [1]✦	Muncie	NPAssn	240	..	*	5,101	R	6	12	July	No	None 37	$30		Dec
Epworth Hospital [1]	South Bend	NPAssn	192	8	8	4,827	R	4	12	July	No	Req 28	$35		Feb
St. Joseph's Hospital	South Bend	Church	150	43	90	3,661	R	3	12	July	No	Req 29	$25(p)		Dec
St. Anthony's Hospital [1]	Terre Haute	Church	197	37	100	3,249	R	3	12	July	No	None 17	$30		Dec
IOWA															
Mercy Hospital	Cedar Rapids	Church	177	..	..	3,236	R	3	12	July	No	Req 25	$25		Jan
Jennie Edmundson Memorial Hospital	Council Bluffs	NPAssn	136	2	..	2,441	R	3	12	July	No	None 20	$25		Jan
Mercy Hospital	Council Bluffs	Church	163	5	100	3,201	R	4	12	July	No	None 27	$25		Jan
Mercy Hospital	Davenport	Church	145	7	..	3,553	R	3	12	July	No	None 19	$25		Jan
Broadlawns, Polk County Public Hosp. [1]	Des Moines	County	118	95	95	4,917	R	8	12	July	(24)	Req 51	$40		Nov
Iowa Lutheran Hospital [1]	Des Moines	Church	145	5	5	4,222	R	4	12	July	(24)	Req 25	$25(q)		Fall
Iowa Methodist Hospital	Des Moines	Church	270	4	..	8,084	R	8	12	July	(24)	Req 53	$20(r)		Nov
Mercy Hospital [1]	Des Moines	Church	187	6	6	4,550	R	5	12	July	(24)	Req 25	$25		Dec
University Hospitals [1,2]✦	Iowa City	State	904	87	95	19,176	R	20	12	July	No	Req 60	$100 yr		Nov
St. Joseph Mercy Hospital	Sioux City	Church	220	..	..	4,357	R	4	12	July	No	Req 34	$25		Jan
KANSAS															
Providence Hospital	Kansas City	Church	125	20	..	3,074	R	3	12	July	No	None 55	$35		Fall
St. Margaret's Hospital	Kansas City	Church	250	24	60	4,380	R	6	12	July	No	Req 59	$25		Nov
University of Kansas Hospital [1]✦	Kansas City	State	350	56	84	5,862	R	10	12	July	(25)	Req 70	$15		Fall
St. Francis Hospital✦	Wichita	Church	300	15	..	6,535	R	7	12	July	(26)	Req 53	$40		Nov
Wesley Hospital	Wichita	Church	251	16	10	5,244	R	5	12	July	(27)	Req 26	$25(o)		Nov
Wichita Hospital	Wichita	Church	115	6	2	2,597	R	4	12	July	(26)	Req 45	$40		Jan
KENTUCKY															
St. Elizabeth Hospital	Covington	Church	316	30	30	5,763	R	6	12	July	No	Req 17	$25		Nov
Good Samaritan Hospital	Lexington	Church	246	50	31	6,747	R	6	12	July	No	Req 29	$25		Dec
St. Joseph Hospital✦	Lexington	Church	250	12	39	7,429	R	5	12	July	No	Req 38	$25		Nov
Kentucky Baptist Hospital	Louisville	Church	170	..	..	4,523	R	5	12	July	(28)	Req 29	$25		Jan
Louisville City Hospital [1,2]✦	Louisville	City	587	98	100	12,013	R	18	12	July	(29)	Req 54	$8.25		NovJan
Norton Memorial Infirmary	Louisville	NPAssn	165	6	75	3,379	R	6	12	July	(28)	Req 40	$20		Varies
St. Anthony's Hospital	Louisville	Church	163	15	15	3,208	R	3	12	July	(28)	None ..	$10-35		Jan
St. Joseph Infirmary✦	Louisville	Church	303	14	5	6,849	R	8	12	July	(28)	None 27	$15(d)		Nov
SS. Mary and Elizabeth Hospital	Louisville	Church	175	15	..	4,528	R	3	12	July	No	None 18	$40		Dec
LOUISIANA															
Charity Hospital [1,2]✦	New Orleans	State	3,068	100	100	61,856	R	170	12	July	No	Req 43	$10		Nov
Hotel Dieu Sisters Hospital	New Orleans	Church	209	5	..	10,145	R	10	12	July	No	None 25	$25		Dec
Mercy Hospital—Soniat Memorial	New Orleans	Church	150	..	..	3,358	R	4	12	July	No	Req 35	$25		Dec
Southern Baptist Hospital✦	New Orleans	Church	275	9	..	11,568	R	10	12	July	No	None 33	$30		Dec
Touro Infirmary [1]✦	New Orleans	NPAssn	440	35	35	11,911	R	21	12	July	No	Req 48	$10		Nov

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
LOUISIANA—Continued															
United States Marine Hospital [3]	New Orleans	USPHS	573	100	100	4,319	R	12	12	July	(30)	Req	39	$62.50	Jan
Highland Sanitarium	Shreveport	Corp	118	15	15	3,374	R	4	12	July	No	None	26	$50	April
North Louisiana Sanitarium	Shreveport	Corp	110	12	100	2,610	R	3	12	July	(31)	Req	45	$50	Jan
T. E. Schumpert Memorial Sanitarium	Shreveport	Church	148	25	..	3,284	R	2	12	July	No	None	41	$50	March
Shreveport Charity Hospital	Shreveport	State	875	100	100	28,455	R	30	12	July	No	None	29	$10	Nov
Tri-State Hospital	Shreveport	Corp	110	2	75	3,852	R	3	12	July	No	None	31	$50	Jan
MAINE															
Eastern Maine General Hospital [1]	Bangor	NPAssn	173	26	26	4,416	R	4	12	July	No	Req	22	$25	Nov
Central Maine General Hospital	Lewiston	NPAssn	227	49	49	3,804	R	6	12	July	No	Op	53	No	Nov
St. Mary's General Hospital [1]	Lewiston	Church	162	15	46	3,458	R	4	12	July	No	None	25	$20	Oct
Maine General Hospital	Portland	NPAssn	281	44	54	6,515	R	6	18	JanJuly	No	Req	39	No	Nov
MARYLAND															
Baltimore City Hospitals [1,2,♦]	Baltimore	City	1,345	92	100	8,831	R&S	45	12	July	No	Req	43	No	Nov
Bon Secours Hospital [1,♦]	Baltimore	Church	175	12	9	3,305	R	4	12	July	No	Req	30	$15	Nov
Church Home and Infirmary [1,♦]	Baltimore	Church	178	22	..	3,241	R&S	7	12	July	No	Req	53	$15	Nov
Franklin Square Hospital [♦]	Baltimore	NPAssn	232	37	..	3,470	R&S	8	12	July	No	Req	28	$10(d)	Dec
Hospital for Women [1,♦]	Baltimore	NPAssn	160	18	38	2,384	R	5	12	July	No	Req	33	No	Dec
Johns Hopkins Hospital [1,2,♦]	Baltimore	NPAssn	945	45	67	17,458	S&M	68	12	JulySept	No	Req	71	No	Dec
Maryland General Hospital [2,♦]	Baltimore	Church	260	33	*	4,590	R	9	12	July	No	Req	23	$10	Nov
Mercy Hospital [♦]	Baltimore	Church	325	35	49	9,045	R	10	12	July	No	Req	40	No	Nov
Provident Hospital and Free Dispensary [♦]	Baltimore	NPAssn	138	72	79	1,896	R	6	12	JulyOct	No	Req	20	$10	Jan
St. Agnes' Hospital [♦]	Baltimore	Church	246	31	50	3,856	R	5	12	July	(32)	Req	25	No	Nov
St. Joseph's Hospital [♦]	Baltimore	Church	281	40	48	5,813	R	8	12	July	No	Req	30	$10	Dec
Sinai Hospital [2,♦]	Baltimore	NPAssn	283	34	100	5,861	S&M	21	12	July	No	Req	37	No	Jan
South Baltimore General Hospital [♦]	Baltimore	NPAssn	175	41	41	3,014	R	6	12	July	(33)	Req	37	$20	Dec
Union Memorial Hospital [♦]	Baltimore	NPAssn	352	15	..	6,547	R	16	12	July	No	Req	42	No	Nov
United States Marine Hospital [3]	Baltimore	USPHS	500	100	100	5,110	R	12	12	July	(34)	Op	67	$62.50	Jan
University Hospital [1,2,♦]	Baltimore	State	450	50	70	9,281	R	15	24	July	(35)	Req	62	No	Dec
West Baltimore General Hospital [♦]	Baltimore	Corp	200	30	30	3,609	R	7	12	July	(36)	Req	42	$15	Nov
MASSACHUSETTS															
Beverly Hospital [♦]	Beverly	NPAssn	141	2	100	3,328	R	4	12	JulySept	No	Req	72	No	.....
Beth Israel Hospital [♦]	Boston	NPAssn	220	21	..	6,199	S	11	12-22	Varies	No	Req	49	No	Jan
Boston City Hospital [1,2,♦]	Boston	City	2,513	89	89	42,993	S	95	Varies	Varies	No	Req	38	No	Jan
Carney Hospital [♦]	Boston	Church	210	6	74	4,716	S	6	16&24	JanMaySept	No	Req	28	No	Jan
Faulkner Hospital	Boston	NPAssn	165	23	*	3,943	R	3	12	JuneOct	No	Req	55	No	Jan
Massachusetts General Hospital [1,2,♦]	Boston	NPAssn	452	48	..	7,220	S	25	12-25	Varies	No	Req	42	No	Jan
Massachusetts Memorial Hospitals [1,♦]	Boston	NPAssn	437	31	65	7,572	R&S	10	12-24	MarJulyNov	(37)	Req	68	No	Dec
New England Hospital for Women and Children [3]	Boston	NPAssn	260	1	55	5,445	R	8	12	JulyOct	No	Req	37	No	Nov
Peter Bent Brigham Hospital [2,♦]	Boston	NPAssn	250	..	..	5,190	S	21	12-29	(n)	(38)	Req	66	No	.....
St. Elizabeth's Hospital	Boston	Church	300	..	..	4,958	R	4	21	Quarterly	No	Req	19	No	Varies
Brockton Hospital	Brockton	NPAssn	155	3	68	3,062	R	4	12	June-Aug	No	Req	42	$10(e)	July
Cambridge City Hospital	Cambridge	City	440	65	65	6,396	R	6	26	(n)	No	Req	31	No	Jan
Cambridge Hospital [♦]	Cambridge	NPAssn	278	11	30	5,056	R&S	5	18	Quarterly	(39)	Req	40	No	Dec
Chelsea Memorial Hospital	Chelsea	Corp	110	40	72	2,370	R	2	12	JulyNov	No	None	33	$20	Jan
United States Naval Hospital	Chelsea	Navy	335	90	..	2,778	R	..	12	July	...	None	48	$62.50	.....
Union Hospital	Fall River	NPAssn	202	5	50	3,407	R	3	12	July	No	Req	19	$25	April
Burbank Hospital	Fitchburg	Corp	226	5	50	4,108	R	4	12	JulyOct	No	Req	26	$25	Nov
Haverhill Municipal Hospital (Hale)	Haverhill	City	208	47	50	4,885	R	2	12	July	No	Req	42	$10	Jan
Holyoke Hospital	Holyoke	NPAssn	168	4	..	2,450	R	3	12	July	No	Req	17	$25	Jan
Providence Hospital	Holyoke	Church	200	10	85	5,882	R	4	12	June	No	Req	16	$25	Dec
Lawrence General Hospital	Lawrence	NPAssn	142	17	46	3,624	R	3	12	July	No	Op	29	$10	Feb
Lowell General Hospital	Lowell	NPAssn	188	14	50	3,573	R	3	12	JulyOct	No	Req	25	$25	Dec
St. John's Hospital	Lowell	Church	204	25	..	3,996	R	4	12	July	No	Req	19	$160 yr	Jan
St. Joseph's Hospital	Lowell	Church	154	6	..	3,275	R	3	12	June	No	Req	26	$10(s)	Jan
Lynn Hospital	Lynn	NPAssn	224	18	55	6,064	R	6	18	JanJuly	No	Req	41	$25	Dec
St. Luke's Hospital	New Bedford	NPAssn	339	10	..	6,459	R	6	12	July	No	Req	32	No	Jan
Newton Hospital	Newton	NPAssn	304	23	23	5,963	R	6	12	June	No	Req	48	No	Jan
House of Mercy Hospital	Pittsfield	NPAssn	233	9	65	3,568	R	3	12	July	No	Req	24	$40	March
St. Luke's Hospital	Pittsfield	Church	189	4	..	5,201	R	2	12	JanJune	No	Req	23	$50	DecMay
Quincy City Hospital	Quincy	City	200	3	33	6,665	R	6	18	JanJuly	(40)	Op	37	$10	Nov
Salem Hospital [3]	Salem	NPAssn	196	21	62	4,711	R	4	12	JulyAug	No	Req	49	$25	Nov
Mercy Hospital	Springfield	NPAssn	365	7	83	5,889	R	6	12	July	No	Req	22	$25	Nov
Springfield Hospital	Springfield	NPAssn	265	7	44	6,223	R	6	18	JanJuly	(41)	Req	27	No	Jan
Wesson Memorial Hospital [1]	Springfield	NPAssn	125	1	..	2,067	R	3	18	JanJuly	(42)	Req	33	$25	JanJuly
Waltham Hospital	Waltham	NPAssn	268	..	..	2,991	R	4	12	July	No	Req	31	$15(g)	Varies
Memorial Hospital [♦]	Worcester	NPAssn	215	13	58	6,396	R	10	20	JanJuly	No	Req	51	No	Nov
St. Vincent Hospital	Worcester	Church	250	7	34	5,088	R	4	15	Quarterly	No	Req	18	$20	Jan
Worcester City Hospital [2,♦]	Worcester	City	540	63	75	11,181	R	10	24	(t)	No	Req	41	No	Nov
Worcester Hahnemann Hospital	Worcester	NPAssn	140	22	100	2,557	R	3	12	July	No	None	57	$35	Jan
MICHIGAN															
University Hospital [1,2,♦]	Ann Arbor	State	1,360	74	93	23,847	R	35	12	July	No	Req	58	No	Dec
Lelia Y. Post Montgomery Hospital	Battle Creek	Church	157	17	..	3,713	R	3	12	July	No	Req	40	$25	Fall
Mercy Hospital [1]	Bay City	Church	140	14	100	4,247	R	3	12	July	No	None	25	$35	Jan
City of Detroit Receiving Hospital [♦]	Detroit	City	652	100	100	20,831	R	28	12	July	(43)	Req	39	$25	Nov
Evangelical Deaconess Hospital [1]	Detroit	Church	205	3	..	5,457	R	5	12	July	(43)	Op	35	$20	Nov
Grace Hospital [1,♦]	Detroit	NPAssn	566	31	57	16,270	R	26	12	JulySept	No	Req	43	$25	Nov
Harper Hospital [1,♦]	Detroit	NPAssn	708	12	49	17,089	R	35	12	June	(44)	Op	26	No	Nov
Henry Ford Hospital [2,♦]	Detroit	NPAssn	616	28	..	11,993	R	25	12	July	(43)	Op	53	$125(a)	Nov
Mount Carmel Mercy Hospital	Detroit	Church	325	5	..	3,825	R	8	12	July	No	Req	41	$20	Nov
Providence Hospital [♦]	Detroit	Church	523	10	..	12,082	R	17	12	July	(45)	None	38	$20	Dec
St. Joseph's Mercy Hospital	Detroit	Church	215	7	7	6,403	R	6	12	July	No	Req	37	$25	Nov
St. Mary's Hospital	Detroit	Church	375	26	32	5,688	R	12	12	July	No	Req	33	$30	Dec
Eloise Hospital and Infirmary—William J. Seymour Hospital [♦]	Eloise	County	1,437	99	99	6,996	R	25	12	July	(43)	Req	33	$25	Jan
Hurley Hospital [♦]	Flint	City	417	..	25	7,822	R	16	12	July	No	None	36	$300 yr	Nov
Blodgett Memorial Hospital [1,♦]	Grand Rapids	NPAssn	150	23	23	3,446	R	6	12	JanJuly	(46)	Req	53	$20	Fall

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free	Pay	Clinic For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
MICHIGAN—Continued																
Butterworth Hospital ✦	Grand Rapids	NPAssn	320	10	53		5,076	R	6	12	July	No	None	42	$20	Nov
St. Mary's Hospital ✦	Grand Rapids	Church	255	25	100		7,954	R	6	12	July	No	Req	39	$10-30	Nov
Highland Park General Hospital [1]	Highland Park	City	190	..	100		4,208	R	7	12	July	No	Req	26	$25	Dec
W. A. Foote Memorial Hospital [1]	Jackson	City	173	2	..		4,731	R	4	12	June	No	Req	45	$50	Sept
Mercy Hospital [1]	Jackson	Church	150	..	..		4,001	R	3	12	July	(47)	None	29	$60	Dec
Edward W. Sparrow Hospital [1]	Lansing	NPAssn	175	2	26		5,272	R	4	12	July	(129)	None	47	$50	Dec
St. Lawrence Hospital [1]	Lansing	Church	175	..	..		4,970	R	4	12	July	(48)	None	50	$60	Jan
Pontiac General Hospital	Pontiac	City	138	15	100		4,241	R	6	12	July	(49)	Req	55	$25	Jan
Saginaw General Hospital	Saginaw	NPAssn	152	29	100		3,658	R	3	12	July	No	Req	32	$45	Nov
St. Mary's Hospital	Saginaw	Church	183	20	..		3,945	R	4	12	July	No	Req	33	$45	Nov
MINNESOTA																
St. Luke's Hospital ✦	Duluth	NPAssn	270	20	..		6,773	R	9	12	July	(50)	Req	75	$20	Nov
St. Mary's Hospital	Duluth	Church	300	25	25		5,917	R	7	12	July	(50)	Req	65	$20	Nov
Asbury Hospital [1]	Minneapolis	Church	140	8	*		4,130	R	3	12	July	No	None	33	$25	Varies
Fairview Hospital	Minneapolis	Church	228	10	10		5,217	R	3	12	July	(51)	Req	33	$25	Nov
Minneapolis General Hospital [1,3✦]	Minneapolis	City	671	86	*		11,994	R	24	18	JanJuly	No	Req	52	$7.50	MayNov
Northwestern Hospital [1]	Minneapolis	NPAssn	185	10	..		4,073	R	5	12	July	No	None	44	$25(e)	Nov
St. Barnabas Hospital [1]	Minneapolis	NPAssn	163	1	*		6,691	R	4	12	JanAprJuly	No	None	48	$25(o)	JulyNov
St. Mary's Hospital [1]	Minneapolis	Church	255	15	100		5,807	R	6	12	July	No	None	41	$15(g)	Nov
Swedish Hospital	Minneapolis	NPAssn	275	2	..		7,401	R	5	12	JanJuly	No	Req	18	$25	FallSpr
University Hospitals [1,3✦]	Minneapolis	State	500	75	88		9,530	S	27	12	July	(52)	Req	73	No	Nov
Ancker Hospital [3✦]	St. Paul	CyCo	906	98	100		10,169	R	32	12	July	No	Req	73	No	Nov
Bethesda Hospital [1]	St. Paul	Church	145	1	..		4,682	R	4	12	July	(51)	None	35	$25	Nov
Charles T. Miller Hospital	St. Paul	NPAssn	230	26	85		6,414	R	7	12	July	(53)	Req	60	(k)	Dec
St. Joseph's Hospital [1]	St. Paul	Church	282	8	45		8,229	R	10	12	July	(54)	Req	43	$25	Nov
MISSOURI																
St. Louis County Hospital [1,3✦]	Clayton	County	210	98	98		4,463	R	6	12	July	No	Req	52	$25	Dec
Kansas City General Hospital [3✦]	Kansas City	City	600	100	100		12,067	R	28	12	July	(55)	Req	76	$20	Nov
Kansas City General Hospital No. 2 [1]	Kansas City	City	274	100	100		3,651	R	12	12	July	No	Req	51	$25	May
Menorah Hospital	Kansas City	NPAssn	173	4	..		3,701	R	5	12	July	No	None	34	$25	Jan
Research Hospital	Kansas City	NPAssn	225	3	*		5,163	R	6	12	July	No	None	64	$25	Nov
St. Joseph Hospital ✦	Kansas City	Church	238	12	100		6,187	R	7	12	June	No	None	72	$25	Nov
St. Luke's Hospital ✦	Kansas City	Church	261	..	5		5,135	R	6	12	July	No	None	73	$25	Nov
St. Mary's Hospital ✦	Kansas City	Church	200	16	18		4,393	R	5	12	July	No	None	51	$25	Dec
Trinity Lutheran Hospital	Kansas City	Church	136	1	5		3,142	R	4	12	July	No	None	39	$25(q)	Fall
Missouri Methodist Hospital [1]	St. Joseph	Church	170	7	100		4,032	R	4	12	July	No	Req	25	$50	Dec
St. Joseph's Hospital	St. Joseph	Church	180	29	100		3,409	R	4	12	July	No	Req	26	$50	Sept
Barnes Hospital [1✦]	St. Louis	Church	400	9	52		10,691	S	33	12&18	JulyDec	(56)	Req	66	No	Dec
De Paul Hospital ✦	St. Louis	Church	285	24	54		7,429	R	9	12	July	No	Req	31	$25	Jan
Evangelical Deaconess Home and Hosp	St. Louis	Church	209	3	..		6,078	R	8	12	July	No	None	30	$20(e)	Dec
Homer G. Phillips Hospital [1✦]	St. Louis	City	741	100	100		9,748	R	30	12	July	No	Req	34	$10(h)	April
Jewish Hospital ✦	St. Louis	NPAssn	283	24	24		6,658	R	11	12	July	(57)	Req	28	$15	Nov
Lutheran Hospital	St. Louis	Church	180	4	..		4,548	R	3	12	July	No	None	27	$25	Jan
Missouri Baptist Hospital ✦	St. Louis	Church	430	12	..		5,465	R	8	12	July	No	None	21	$25	Dec
St. Anthony's Hospital	St. Louis	Church	250	25	90		4,651	R	7	12	July	(58)	Op	22	$25	Nov
St. John's Hospital	St. Louis	Church	320	17	17		6,530	R	11	12	July	(59)	Req	20	$20	Nov
St. Louis City Hospital [3✦]	St. Louis	City	734	100	100		18,954	R	69	12	July	(60)	Req	56	$10(h)	Nov
St. Luke's Hospital ✦	St. Louis	Church	206	19	..		4,856	R	9	12	July	(59)	Req	47	$20	Dec
St. Mary's Group of Hospitals ✦	St. Louis	Church	731	40	100		12,892	R	26	12	July	(112)	Req	53	No	Nov
St. Mary's Infirmary	St. Louis	Church	150	31	..		1,546	R	3	12	July	No	None	50	...	April
MONTANA																
Murray Hospital	Butte	Corp	140	..	100		2,479	R	3	12	July	No	Req	37	$75(k)	June
St. James Hospital	Butte	Church	201	14	14		2,725	R	3	12	July	No	Req	28	$50	Jan
NEBRASKA																
Bryan Memorial Hospital [1]	Lincoln	Church	120	9	100		2,424	R	3	12	July	No	None	52	$25	Spring
Lincoln General Hospital [1]	Lincoln	City	176	10	20		3,366	R	3	12	July	No	None	31	$25	Dec
St. Elizabeth Hospital	Lincoln	Church	200	22	..		4,370	R	4	12	July	No	None	33	$25	Sept
Bishop Clarkson Memorial Hospital ✦	Omaha	Church	150	3	3		3,531	R	4	12	June	No	None	37	$25	.....
Creighton Memorial St. Joseph's Hosp. [3✦]	Omaha	Church	409	10	11		8,451	R	12	12	July	No	Req	30	$20(d)	Nov
Immanuel Deaconess Institute	Omaha	Church	146	9	*		4,580	R	4	12	June	No	None	47	$25	Dec
Nebraska Methodist Episcopal Hospital	Omaha	Church	194	6	*		4,583	R	5	12	June	No	Req	50	$25(d)	Jan
St. Catherine's Hospital	Omaha	Church	175	20	20		3,245	R	4	12	July	No	Op	19	$25	Dec
University of Nebraska Hospital ✦	Omaha	State	230	100	100		3,439	R	12	12	July	No	Req	81	$25	Dec
NEW HAMPSHIRE																
Margaret Pillsbury General Hospital	Concord	NPAssn	152	4	32		2,367	R	2	12	JanJuly	No	Req	41	$10	Varies
Mary Hitchcock Memorial Hospital [1✦]	Hanover	NPAssn	196	18	51		4,855	R	6	18-24	Quarterly	No	Req	77	$100 yr	Nov
NEW JERSEY																
Atlantic City Hospital ✦	Atlantic City	NPAssn	300	72	72		6,836	R	8	12	July	No	Req	42	$25	Nov
Bayonne Hospital and Dispensary ✦	Bayonne	NPAssn	250	68	..		4,979	R	6	18	Quarterly	No	Req	19	$25	JanJuly
Cooper Hospital ✦	Camden	NPAssn	375	40	..		6,629	R	11	12&24	July	No	Req	25	$10	Dec
West Jersey Homeopathic Hospital	Camden	NPAssn	300	40	70		5,935	R	8	12	June	No	Req	36	$25	Nov
East Orange General Hospital	East Orange	NPAssn	150	25	..		3,298	R	4	12	July	No	Req	21	$25	July
Alexian Bros. Hosp. (male patients only)	Elizabeth	Church	165	60	..		2,468	R	3	12	July	(61)	Req	19	$50	March
Elizabeth General Hosp. and Dispensary	Elizabeth	NPAssn	226	..	50		6,100	R	5	24	July	No	Req	34	$15	Oct
St. Elizabeth Hospital	Elizabeth	Church	262	39	49		4,259	R	8	12	July	No	Req	25	$15	Nov
Englewood Hospital [1,3]	Englewood	NPAssn	238	31	..		5,686	R	6	18	JanJuly	No	Req	23	$20	JanJuly
Hackensack Hospital [1]	Hackensack	NPAssn	292	57	..		8,506	R	5	24	July	(62)	Req	35	$25	Fall
St. Mary's Hospital	Hoboken	Church	400	70	70		5,782	R	10	12&24	July	No	Req	19	$25	Oct
Christ Hospital [1]	Jersey City	Church	200	20	46		5,346	R	6	18	JanJuly	No	Req	41	$25	Dec
Jersey City Hospital [1,3✦]	Jersey City	City	900	90	100		17,642	R	42	12-24	JanJuly	(63)	Req	16	No	Nov
St. Francis Hospital [1]	Jersey City	Church	240	55	50		3,849	R	4	24	July	(64)	Req	21	$25	Feb
Monmouth Memorial Hospital [3]	Long Branch	NPAssn	211	60	100		5,045	R	6	18	JanJuly	(65)	Req	24	$15	Dec

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
NEW JERSEY—Continued															
Mountainside Hospital [3♦]	Montclair	NPAssn	326	5	39	6,423	R	6	24	July	No	Req	32	$15	Dec
All Souls Hospital	Morristown	Church	144	27	25	2,368	R	3	12	JulySept	No	Req	35	$35	Jan
Morristown Memorial Hospital	Morristown	NPAssn	155	..	68	3,208	R	6	12	June-Sept	No	Req	36	$30	May
Burlington County Hospital [♦]	Mount Holly	NPAssn	145	36	70	2,906	R	4	12	July	(66)	Req	60	$25	Feb
Fitkin Memorial Hospital	Neptune	NPAssn	224	62	62	5,129	R	6	12	JanJuly	No	Req	19	$25	.....
Hospital of St. Barnabas and for Women and Children [1]	Newark	Church	235	27	..	4,788	R	5	12	July	No	Req	24	$25	Fall
Newark Beth Israel Hospital [3♦]	Newark	NPAssn	455	..	30	11,738	R	12	18	JanJuly	No	Req	27	$15	Dec
Newark City Hospital [1.3♦]	Newark	City	740	100	100	16,984	R	12	24	Qaurterly	No	Req	30	$15-20	Dec
Newark Memorial Hospital	Newark	NPAssn	165	11	55	2,924	R	4	12	July	No	Req	..	$25	March
St. James Hospital [1]	Newark	Church	133	26	84	2,793	R	3	12	July	No	Req	27	$30	March
St. Michael's Hospital	Newark	Church	335	2	..	6,235	R	7	12	JulySept	(64)	Req	20	$25	Nov
St. Peter's General Hospital [1]	New Brunswick	Church	210	40	..	4,427	R	5	12	JulySept	No	Req	31	$20	June
Orange Memorial Hospital	Orange	NPAssn	400	18	40	8,150	R	8	12	July	No	Req	26	$25	Nov
St. Mary's Hospital	Orange	Church	150	22	..	2,883	R	3	12	July	No	Req	25	$25	Nov
Passaic General Hospital	Passaic	NPAssn	225	33	33	4,978	R	4	12	July	No	Req	22	$25	Nov
St. Mary's Hospital	Passaic	Church	218	20	..	5,716	R	4	12	July	No	Op	44	$25	Nov
Nathan and Miriam Barnert Memorial Hospital	Paterson	NPAssn	145	34	65	3,765	R	5	12	JulySept	No	Req	34	$15	Dec
Paterson General Hospital [1]	Paterson	NPAssn	328	37	..	7,391	R	4	24	July	No	Op	29	$12.50(p)	Nov
St. Joseph's Hospital	Paterson	Church	450	40	60	6,960	R	5	24	July	No	Req	25	$13-25	Nov
Perth Amboy General Hospital	Perth Amboy	NPAssn	163	17	45	5,170	R	5	12	JanJuly	No	None	16	$50	OctApril
Muhlenberg Hospital [3]	Plainfield	NPAssn	305	34	..	6,578	R	6	12	July	No	Req	24	$25	Jan
Holy Name Hospital	Teaneck	Church	225	35	..	5,108	R	6	12	July	No	Req	46	$40	Jan
Mercer Hospital	Trenton	NPAssn	250	37	49	5,368	R	6	12	July	No	Req	15	$25	Varies
St. Francis Hospital	Trenton	Church	321	39	..	6,499	R	8	12	July	No	Req	26	$25	Oct
William McKinley Memorial Hospital	Trenton	Church	156	40	100	2,930	R	4	12	July	No	Req	19	$25	.....
North Hudson Hospital [1.3]	Weehawken	NPAssn	191	16	57	3,641	R	8	12	JanJulySept	(64)	Req	36	$25	Varies
NEW YORK															
Albany Hospital [1.3♦]	Albany	NPAssn	652	3	61	12,200	R	21	12&24	July	No	Req	68	(u)	Nov
Memorial Hospital [1]	Albany	NPAssn	136	1	45	2,726	R	5	12	JulySept	No	Req	31	$25	Jan
St. Peter's Hospital	Albany	Church	155	28	28	3,393	R	5	12	July	(67)	Req	29	$40	Nov
Binghamton City Hospital [3♦]	Binghamton	City	575	47	47	6,666	R	6	24	July	No	Req	35	$25	Nov
Beth-El Hospital [1]	Brooklyn	NPAssn	270	41	41	7,893	R	12	12&24	JanJuly	No	Req	28	No	Oct
Beth Moses Hospital [3]	Brooklyn	NPAssn	224	44	..	4,766	R	8	24	JanJuly	No	Req	23	$15	Dec
Brooklyn Hospital [♦]	Brooklyn	NPAssn	410	44	61	8,395	R	8	24	July	No	Req	61	No	Nov
Bushwick Hospital	Brooklyn	NPAssn	130	1	100	2,997	R	5	24	July	No	Req	25	No	Dec
Caledonian Hospital [1]	Brooklyn	NPAssn	130	28	100	2,292	M	2	24	July	No	Req	31	$25	Jan
Coney Island Hospital [1.3♦]	Brooklyn	City	409	100	100	8,834	R	11	24	July	No	Req	29	$15	Dec
Cumberland Hospital [3♦]	Brooklyn	City	395	100	100	8,545	R&S	14	12&24	July	No	Op	67	$15	Dec
Greenpoint Hospital [1.3♦]	Brooklyn	City	300	100	100	8,265	R	10	24	July	No	Req	34	$15	Nov
Israel Zion Hospital [1]	Brooklyn	NPAssn	484	24	33	9,975	R	16	24&30	JanJuly	(68)	Req	23	No	Nov
Jewish Hospital [1.3♦]	Brooklyn	NPAssn	661	31	44	12,702	M&S	27	12-24	JanJuly	No	Req	46	No	Nov
Kings County Hospital [3♦]	Brooklyn	City	2,545	100	100	59,068	RMS	68	12&24	July	No	Req	19	$15	Nov
Long Island College Hospital [1♦]	Brooklyn	NPAssn	467	44	72	9,330	R&S	21	12	July	(69)	Req	41	No	Jan
Methodist Hospital [♦]	Brooklyn	Church	480	30	85	9,825	R	7	24	July	No	Req	40	No	Nov
Norwegian Lutheran Deaconesses' Home and Hospital [1♦]	Brooklyn	Church	200	..	60	3,768	R	10	12	July	No	Req	48	No	Nov
St. Catherine's Hospital	Brooklyn	Church	353	..	90	7,057	R	8	24	July	No	Req	27	No	Nov
St. John's Hospital [♦]	Brooklyn	Church	234	49	..	5,260	R	4	36	July	No	Req	42	No	Nov
St. Mary's Hospital [♦]	Brooklyn	Church	306	22	78	6,139	R	7	24	July	No	Req	25	No	Nov
St. Peter's Hospital	Brooklyn	Church	226	..	..	3,546	R	7	12	July	No	None	21	No	Jan
United States Naval Hospital	Brooklyn	Navy	515	100	100	3,849	R	..	12	July	No	Req	33	.....	.....
Unity Hospital [3]	Brooklyn	NPAssn	248	54	65	4,928	R	7	24	July	No	Req	25	No	Dec
Wyckoff Heights Hospital	Brooklyn	NPAssn	199	28	58	4,608	M	6	18-24	JanJuly	No	Req	20	No	Varies
Buffalo General Hospital [3♦]	Buffalo	NPAssn	475	9	50	10,618	R	15	12	July	No	Req	44	No	Nov
Buffalo Hospital of the Sisters of Charity	Buffalo	Church	229	1	29	4,079	R	12	12	July	(70)	Req	20	$25	Sept
Deaconess Hospital [♦]	Buffalo	NPAssn	239	2	15	5,945	R	6	12	July	No	Req	44	$25	Dec
Edward J. Meyer Memorial Hospital [1.3♦] (Buffalo City Hospital)	Buffalo	City	1,063	85	96	10,964	R	13	12	July	No	Req	29	$50(a)	Dec
Mercy Hospital	Buffalo	Church	198	3	*	4,396	R	5	12	July	No	Req	21	$30	Nov
Millard Fillmore Hospital [♦]	Buffalo	NPAssn	327	19	19	6,837	R	7	12	July	(71)	Req	34	$15	Nov
Mary Imogene Bassett Hospital [1♦]	Cooperstown	NPAssn	105	..	..	1,984	R&S	4	12&24	July	(72)	None	63	$50	Jan
Arnot-Ogden Memorial Hospital	Elmira	NPAssn	213	5	..	4,057	R	4	12	July	No	Req	29	$20(d)	Nov
St. Joseph's Hospital	Elmira	Church	216	7	100	3,737	R	5	12	July	No	Req	30	$25	Dec
Ideal Hospital [1]	Endicott	City	146	2	*	2,693	R	3	12	July	No	None	37	$35	Varies
Flushing Hospital and Dispensary [1]	Flushing	NPAssn	294	2	..	7,100	R	5	24	June	No	Req	25	$25	Dec
Meadowbrook Hospital [1♦]	Hempstead	County	268	90	100	6,186	R	6	24	July	No	Req	50	$25	Dec
Jamaica Hospital [1]	Jamaica	NPAssn	223	15	25	4,912	R	5	24	JanJuly	No	Req	34	$15	.....
Mary Immaculate Hospital [3♦]	Jamaica	Church	320	22	33	7,875	R	8	24	July	No	Req	26	No	Nov
Queens General Hospital [1.3♦]	Jamaica	City	696	100	100	13,208	R&S	22	12&24	July	No	Req	63	$15	Sept
Charles S. Wilson Memorial Hospital [3♦]	Johnson City	NPAssn	350	1	100	5,535	T	7	24	July	(73)	Req	51	$50	Dec
Kingston Hospital [1]	Kingston	NPAssn	133	1	51	2,995	R	3	12	July	(74)	None	51	$25(o)	Varies
Our Lady of Victory Hospital	Lackawanna	Church	160	5	100	2,747	R	4	12	July	No	Req	35	$50	Jan
St. John's Long Island City Hospital [3]	Long Island City	Church	291	9	9	5,163	R	7	24	July	No	Req	44	No	Dec
Nassau Hospital	Mineola	NPAssn	192	1	32	5,403	R	4	12	July	No	None	35	$50	Dec
Mount Vernon Hospital	Mount Vernon	NPAssn	181	26	32	4,290	R	3	24	July	No	Req	24	(w)	Nov
New Rochelle Hospital [♦]	New Rochelle	NPAssn	294	9	..	6,397	R	8	12	July	No	Req	24	$25	Dec
Beekman Hospital [1]	New York	NPAssn	100	63	63	1,916	M	4	24	JanJuly	No	Req	67	$30	Nov
Bellevue Hospital [1.3♦]	New York	City	2,583	100	100	64,506	RMS	98	12-24	JanJuly	No	Req	31	$15	OctNov
Beth David Hospital	New York	NPAssn	200	29	60	3,965	R	8	24	JanJuly	No	Req	28	No	Dec
Beth Israel Hospital [1.3♦]	New York	NPAssn	400	39	49	9,950	R&S	12	24-36	July	No	Req	43	No	Dec
Bronx Hospital [3♦]	New York	NPAssn	362	27	51	11,074	R	8	24	Quarterly	No	Req	31	(e)	Dec
Columbus Hospital	New York	Church	300	28	56	5,049	R	12	18	JanJuly	No	Req	17	No	.....
Flower and Fifth Avenue Hospitals [3♦]	New York	NPAssn	410	5	43	8,810	R	12	15	Quarterly	No	Req	36	No	Quarterly
Fordham Hospital [3♦]	New York	City	600	100	100	14,552	R	20	12&24	MarJulyNov	No	Req	36	$15	Dec
French Hospital [♦]	New York	NPAssn	332	7	98	5,847	S	9	12&24	Quarterly	No	Op	33	No	Nov
Gouverneur Hospital [3]	New York	City	220	100	100	4,429	R	16	12&24	JanJuly	No	Req	27	$15	Nov
Harlem Hospital [1.3♦]	New York	City	763	100	100	18,968	R	24	24	JanJuly	No	Op	25	$15	Dec
Hospital for Joint Diseases [3♦]	New York	NPAssn	355	60	69	6,643	R	6	24	JanJuly	(75)	Req	33	$15	Nov
Jewish Memorial Hospital [3]	New York	NPAssn	209	24	79	4,755	R	6	24	JanJuly	No	Req	34	(o)	Dec
Knickerbocker Hospital [3]	New York	NPAssn	260	64	..	4,347	R	6	30	JanJuly	No	Op	37	No	Nov
Lebanon Hospital	New York	NPAssn	154	50	*	2,603	R	4	24	AprilOct	No	Req	26	No	Dec

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
NEW YORK—Continued															
Lenox Hill Hospital [1,3♣]	New York	NPAssn	677	35	100	11,734	R	12	24	JanJuly	No	Req	50	$40 yr	Oct
Lincoln Hospital [3♣]	New York	City	469	100	100	9,666	R	24	24	MarchJuly	No	Req	33	$15	Dec
Manhattan General Hospital [1]	New York	Corp	248	..	*	4,766	R	6	18	JanJuly	No	None	32	$33.50(x)	SeptMay
Metropolitan Hospital [1,3♣]	New York	City	1,111	100	100	13,151	R	21	24	July	No	Req	27	$15	Dec
Misericordia Hospital [1]	New York	Church	263	5	37	3,351	R	4	24	JanJuly	No	Req	20	$20	July Jan
Montefiore Hosp. for Chronic Diseases [1,3♣]	New York	NPAssn	714	87	90	1,715	M&S	11	12	JanJuly	No	Req	72	$25	Nov
Morrisania City Hospital [3♣]	New York	City	539	100	100	12,044	R	16	24	JanJuly	No	Req	30	$15	Dec
Mount Sinai Hospital [1,3♣]	New York	NPAssn	856	55	67	16,726	M&S	14	12&30	MarJulyNov	No	Op	45	No	Oct
New York City Hospital [1,3♣]	New York	City	880	100	100	10,658	RMS	22	12&24	July	No	Req	41	$15	Nov
New York Hospital [1♣]	New York	NPAssn	1,057	5	77	16,312	S	36	12&24	July	(76)	Op	57	No	Dec
New York Infirmary for Women and Children [2,3♣]	New York	NPAssn	167	35	95	3,651	R	5	12	JuneSept	No	Req	60	$10	Sept
New York Polyclinic Medical School and Hospital [3♣]	New York	NPAssn	366	12	*	8,739	R	4	24	Quarterly	No	Req	28	No	JanMaySept
New York Post-Graduate Medical School and Hospital [3♣]	New York	NPAssn	410	16	48	9,146	M&S	8	12&24	Quarterly	No	Req	42	No	Nov
Presbyterian and Sloan Hospitals [1,3♣]	New York	NPAssn	986	31	59	17,449	M&S	20	12-25	FebJuneOct	No	Req	49	No	Nov
Roosevelt Hospital [3♣]	New York	NPAssn	397	9	77	7,555	S	14	30&36	JanJuly	No	Req	37	No	Varies
St. Francis Hospital [1]	New York	Church	415	40	65	5,641	M&S	4	24	JanJuly	No	None	16	No	Dec
St. Luke's Hospital [3♣]	New York	Church	517	41	75	8,457	M	8	12&24	JanJuly	No	Req	52	No	Oct
St. Vincent's Hospital [♣]	New York	Church	465	19	..	10,197	M	14	30	JanJuly	No	Req	38	(o)	Nov
Sydenham Hospital [3♣]	New York	NPAssn	203	10	55	4,639	R&M	10	12&24	JanJuly	No	Req	51	No	Dec
Welfare Hospital for Chronic Diseases [1,3♣]	New York	City	1,500	100	100	2,745	M	12	12	July	No	Req	47	$18	Nov
United Hospital	Port Chester	NPAssn	302	2	90	4,594	R	6	12	July	No	Req	70	$40(e)	Nov
Vassar Brothers Hospital	Poughkeepsie	NPAssn	225	18	50	4,834	R	4	12	July	No	Req	18	$30(d)	Nov
Genesee Hospital [♣]	Rochester	NPAssn	244	..	45	5,713	R	4	24	July	(77)	Req	44	No	Nov
Highland Hospital	Rochester	NPAssn	265	4	100	5,431	R	5	24	July	No	Req	32	$25	Nov
Rochester General Hospital [♣]	Rochester	NPAssn	375	10	89	8,917	R	3	24	July	No	Req	52	$15	.....
St. Mary's Hospital [♣]	Rochester	Church	238	20	..	6,731	R	6	12	July	No	Req	34	$20	Jan
Strong Memorial and Rochester Municipal Hospitals [1♣]	Rochester	NP-Cy	665	62	92	14,673	M&S	27	12&24	July	No	Req	67	No	Oct
Ellis Hospital [1]	Schenectady	NPAssn	456	1	..	8,255	R	10	12	July	No	Req	21	$15	Dec
U. S. Marine Hospital [3] (Staten Island)	Stapleton	USPHS	661	100	100	7,914	R&S	20	12	July	(78)	Req	65	$62.50	Dec
St. Vincent's Hospital	Staten Island	Church	241	2	76	5,797	R	4	24	July	No	Req	16	No	Jan
Staten Island Hospital	Staten Island	Corp	292	2	..	5,776	R	4	24	July	No	Req	43	$15	Nov
Crouse-Irving Hospital	Syracuse	NPAssn	240	8	39	5,684	R	4	12	July	No	Req	33	$25	Nov
General Hospital [1]	Syracuse	NPAssn	110	4	30	2,719	R	4	12	July	No	Req	29	$10	Feb
Hospital of the Good Shepherd [♣]	Syracuse	NPAssn	210	2	47	4,851	R	12	24	July	(79)	None	40	No	Nov
St. Joseph Hospital	Syracuse	Church	231	30	53	6,842	R	8	12	July	No	None	18	No	Nov
Syracuse Memorial Hospital [♣]	Syracuse	NPAssn	250	30	39	6,033	R	12	24	July	(79)	None	46	No	Nov
Leonard Hospital	Troy	NPAssn	125	6	15	2,583	R	4	12	July	No	None	16	$20	Jan
Samaritan Hospital	Troy	NPAssn	182	3	45	4,035	R	4	12	JulySept	No	Req	31	$25	Dec
Troy Hospital [1]	Troy	Church	294	10	..	4,159	R	4	12	July	(67)	Req	16	$30	Dec
Grasslands Hospital [1,3♣]	Valhalla	County	815	91	100	5,798	R	12	24	JanJuly	No	Req	68	(y)	Nov
St. Agnes Hospital	White Plains	Church	177	4	90	3,865	R	5	12	July	No	Req	41	$25	Nov
St. John's Riverside Hospital	Yonkers	NPAssn	200	1	65	5,017	R	6	12	AprJulyOct	No	Req	29	$25	Varies
St. Joseph's Hospital	Yonkers	Church	197	7	100	3,128	R	6	18	JanJuly	No	Req	29	...	Dec
NORTH CAROLINA															
Duke Hospital [3♣]	Durham	NPAssn	570	63	85	11,363	S	65	12	JulySept	No	Req	54	No	Jan
Lincoln Hospital	Durham	NPAssn	108	55	72	1,829	R	4	12	July	No	Req	35	$25	Jan
Watts Hospital [♣]	Durham	NPAssn	225	24	32	5,442	R&S	5	12	July	No	Req	28	$15	Feb
Rex Hospital	Raleigh	NPAssn	200	30	85	5,099	R	5	12	July	No	Req	24	$25	Nov
James Walker Memorial Hospital	Wilmington	NPAssn	197	49	100	6,432	R	6	12	July	No	Req	38	$25(e)	Feb
City Hospital [♣]	Winston-Salem	City	345	38	38	7,518	R&M	12	12	July	No	Req	26	$15(z)	Nov
NORTH DAKOTA															
St. John's Hospital [1]	Fargo	Church	185	3	..	5,300	R	4	12	July	(80)	None	37	$25	Nov
Trinity Hospital [♣]	Minot	Church	188	10	*	3,611	R	4	12	July	No	None	83	$25	Nov
OHIO															
City Hospital [♣]	Akron	NPAssn	365	33	33	11,662	R	15	12	July	(81)	Req	48	$22	Nov
Peoples Hospital [1]	Akron	NPAssn	176	23	23	4,811	R	4	12	July	(81)	Req	36	$30	Nov
St. Thomas Hospital [♣]	Akron	Church	175	20	80	5,481	R	3	12	July	No	None	31	$20	Nov
Aultman Hospital	Canton	NPAssn	171	23	23	2,610	R	4	12	July	(82)	Op	30	$50	Nov
Mercy Hospital [♣]	Canton	Church	235	19	*	6,247	R	5	12	July	No	Op	31	$25	Nov
Bethesda Hospital	Cincinnati	Church	279	35	20	6,581	R	7	12	July	No	Req	18	$30(d)	Nov
Christ Hospital [♣]	Cincinnati	Church	371	13	95	5,332	R	9	12	June	(83)	Req	28	$22.50	Nov
Cincinnati General Hospital [1,3♣]	Cincinnati	City	972	87	100	15,979	R	40	12	July	(84)	Req	69	No	Nov
Deaconess Hospital [♣]	Cincinnati	Church	200	6	42	4,709	R	6	12	July	(85)	Req	19	$25(e)	Dec
Good Samaritan Hospital [♣]	Cincinnati	Church	615	5	8	11,102	R	12	12	June	No	Req	19	$15	Nov
Jewish Hospital [1♣]	Cincinnati	NPAssn	262	17	17	5,895	R	8	12	July	(86)	Op	32	$20	Dec
St. Mary's Hospital	Cincinnati	Church	223	60	60	4,635	R	6	12	July	No	Req	18	$25	Nov
City Hospital [1,3♣]	Cleveland	City	1,600	92	100	14,034	R	36	12	July	No	Req	40	No	Nov
Fairview Park Hospital	Cleveland	Church	101	13	14	3,679	R	3	12	July	No	Req	43	$30	Jan
Lutheran Hospital	Cleveland	Church	137	5	100	4,413	R	4	12	July	No	None	35	$25(d)	Nov
Mount Sinai Hospital [1,3♣]	Cleveland	NPAssn	270	13	23	8,638	R	6	24	July	No	Req	32	$10(g)	Nov
St. Alexis Hospital [♣]	Cleveland	Church	220	35	35	5,281	R	8	12	July	(87)	Req	37	$10	Nov
St. John's Hospital [♣]	Cleveland	Church	252	17	17	6,804	R	7	12	July	No	None	35	$10(aa)	Dec
St. Luke's Hospital [3♣]	Cleveland	Church	391	17	21	12,421	R&S	10	24	June	No	Req	35	No	Nov
St. Vincent Charity Hospital [♣]	Cleveland	Church	295	32	35	6,317	R	12	12	July	(87)	Req	40	No	Dec
University Hospitals [1,3♣]	Cleveland	NPAssn	807	28	48	20,151	M&S	25	12-24	(bb)	No	Req	61	(y)	Nov
Woman's Hospital [1]	Cleveland	NPAssn	127	6	6	2,605	R	2	12	July	No	None	22	$25	Dec
Mount Carmel Hospital	Columbus	Church	225	20	5	5,779	R	6	12	July	(88)	None	32	$25	Jan
St. Francis Hospital	Columbus	State	160	66	66	3,072	R	8	12	July	(89)	None	34	$125 yr	Nov
Starling-Loving University Hospital [1♣]	Columbus	State	296	59	70	6,028	S	12	12	July	(90)	Req	67	$50 yr	Oct
White Cross Hospital	Columbus	Church	271	13	100	6,981	R	6	12	July	No	None	51	$25	Dec
Good Samaritan Hospital [1]	Dayton	Church	283	40	28	4,857	R	4	12	July	No	None	21	$25	Dec
Miami Valley Hospital [♣]	Dayton	NPAssn	444	28	28	10,749	R	8	12	July	(91)	None	37	$25	Nov
St. Elizabeth Hospital	Dayton	Church	400	35	38	8,020	R	6	12	July	No	None	24	$25	Nov
Huron Road Hospital [1♣]	East Cleveland	NPAssn	256	9	..	8,371	R	8	12	July	No	Req	47	$20	Nov

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Percentage of Patients: Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
OHIO—Continued															
Mercy Hospital	Hamilton	Church	240	40	75	3,240	R	3	12	July	No	Req	23	$35(ee)	Nov
Lima Memorial Hospital	Lima	NPAssn	144	13	75	3,746	R	4	12	July	No	None	27	$50	.....
St. Rita's Hospital	Lima	Church	117	..	..	2,355	R	2	12	July	No	None	30	$35	Jan
Springfield City Hospital	Springfield	City	298	39	65	5,547	R	7	12	July	No	Req	32	$30	Nov
Flower Hospital	Toledo	Church	160	6	..	2,725	R	4	12	July	No	None	25	$35(e)	Dec
Lucas County General Hospital ✦	Toledo	County	325	100	100	4,338	R	12	12	July	No	Req	37	$25	Nov
Mercy Hospital [1]	Toledo	Church	145	13	95	3,540	R	3	12	July	No	Req	37	$25	Nov
St. Vincent's Hospital [1]	Toledo	Church	354	30	30	8,564	R	11	12	July	No	Req	28	$25	Jan
Toledo Hospital	Toledo	NPAssn	275	8	..	5,519	R	8	12	July	No	Req	39	$25	Nov
Women's and Children's Hospital	Toledo	NPAssn	150	2	30	2,561	R	3	12	July	No	None	23	$25	Jan
St. Elizabeth's Hospital ✦	Youngstown	Church	262	8	10	8,166	R	7	12	July	No	None	22	$30(d)	Nov
Youngstown Hospital ✦	Youngstown	NPAssn	567	20	20	11,516	R	16	24	July	No	Req	27	(dd)	Nov
OKLAHOMA															
St. Anthony Hospital ✦	Oklahoma City	Church	400	8	16	10,207	R	9	12	July	No	None	15	$20	Nov
State University and Crippled Children's Hospitals ✦	Oklahoma City	State	468	95	100	6,532	R	11	24	July	(131)	Req	55	$10-25	Nov
Wesley Hospital	Oklahoma City	Part	160	..	..	4,217	R	4	12	July	No	None	23	$25	Nov
St. John's Hospital	Tulsa	Church	250	33	33	6,277	R	6	12	July	No	None	22	$25(o)	Oct
OREGON															
Emanuel Hospital ✦	Portland	Church	298	10	100	9,032	R	11	12	June	(92)	None	35	$20	Nov
Good Samaritan Hospital	Portland	Church	350	6	100	8,273	R	10	12	July	No	None	39	$20	Nov
Portland Sanitarium and Hospital	Portland	Church	153	12	*	5,912	R	4	12	June	No	None	46	$40	Nov
St. Vincent's Hospital ✦	Portland	Church	422	10	5	10,863	R	10	12	June	No	None	58	$25	Oct
University of Oregon Medical School Hospitals and Clinics ✦	Portland	CoState	465	100	100	7,569	R	9	24	July	No	Req	63	$20	Nov
PENNSYLVANIA															
Abington Memorial Hospital ✦	Abington	NPAssn	305	13	65	6,532	R	6	24	July	No	Req	58	No	Nov
Allentown Hospital [1,3]	Allentown	NPAssn	385	56	98	8,518	R	10	12	July	No	Req	50	No	Oct
Sacred Heart Hospital [2]	Allentown	Church	325	65	65	5,209	R	7	12	July	No	Req	36	No	Jan
Altoona Hospital	Altoona	NPAssn	180	43	..	3,399	R	4	12	July	No	Req	22	$25	Jan
Mercy Hospital	Altoona	Church	180	54	54	3,494	R	4	12	July	No	Req	43	$25	Oct
St. Luke's Hospital ✦	Bethlehem	NPAssn	216	48	48	4,651	R	8	12	July	No	Req	38	(e)	Varies
Braddock General Hospital [1]	Braddock	NPAssn	137	28	..	3,253	R	4	12	July	No	Req	17	$25	Jan
Bryn Mawr Hospital ✦	Bryn Mawr	Corp	264	8	..	5,112	R	8	12	July	No	Req	48	No	Nov
Chester Hospital	Chester	NPAssn	250	48	..	4,737	R	6	12	July	No	Req	25	$15	Jan
George F. Geisinger Memorial Hospital ✦	Danville	NPAssn	174	41	100	3,750	R	10	12	July	No	Req	37	No	Dec
Fitzgerald-Mercy Hospital [1]	Darby	Church	248	60	..	3,975	R	8	12	July	No	Req	61	No	Jan
Easton Hospital	Easton	NPAssn	220	40	40	4,882	R	5	12	July	No	Req	19	(e)	Jan
Hamot Hospital	Erie	NPAssn	255	60	60	6,431	R	8	12	July	No	Req	52	$25	Nov
St. Vincent's Hospital	Erie	NPAssn	330	51	100	6,701	R	8	12	June	No	Req	35	$15(d)	Nov
Harrisburg Hospital [1]	Harrisburg	NPAssn	264	41	41	7,075	R	10	12	July	No	Req	26	$15	Nov
Harrisburg Polyclinic Hospital	Harrisburg	NPAssn	192	30	39	4,491	R	5	12	July	No	Req	19	$25	Nov
Conemaugh Valley Memorial Hospital	Johnstown	NPAssn	345	53	..	6,583	R	8	12	July	No	Req	19	$25	Nov
Nesbitt Memorial Hospital	Kingston	NPAssn	140	15	..	3,045	R	3	12	July	No	Req	15	No	Nov
Lancaster General Hospital [1]	Lancaster	NPAssn	277	35	45	6,417	R	7	12	July	No	Req	39	$17.50	Dec
St. Joseph's Hospital [1]	Lancaster	Church	232	39	39	4,498	R	6	12	July	No	Req	65	$17.50	Jan
McKeesport Hospital	McKeesport	NPAssn	290	44	44	5,700	R	7	12	July	No	Req	28	$25	Nov
Montgomery Hospital	Norristown	NPAssn	160	50	50	3,305	R	5	12	July	No	Req	37	$30	.....
Chestnut Hill Hospital	Philadelphia	NPAssn	114	39	..	1,894	R	4	12	July	No	Req	71	$50	Oct
Frankford Hospital	Philadelphia	NPAssn	192	13	60	4,368	R	7	12	July	No	Req	31	No	Dec
Germantown Dispensary and Hospital ✦	Philadelphia	NPAssn	396	24	100	7,506	R	6	24	July	No	Req	38	No	Oct
Graduate Hospital of the University of Pennsylvania ✦	Philadelphia	NPAssn	461	61	69	6,952	R	8	24	July	(93)	Req	45	No	Nov
Hahnemann Hospital ✦	Philadelphia	NPAssn	592	52	64	12,407	R	24	12	July	No	Req	36	No	Jan
Hospital of the Protestant Episcopal Church ✦	Philadelphia	Church	530	..	100	8,201	R	8	24	JanJuly	No	Req	76	No	Nov
Hospital of the Univ. of Pennsylvania [1,3]	Philadelphia	NPAssn	528	27	78	11,366	R	14	24	July	No	Req	67	No	Oct
Hosp. of the Woman's Medical College [2]	Philadelphia	NPAssn	173	43	100	3,097	R	6	12	JulySept	No	Req	27	No	Nov
Jefferson Medical College Hospital ✦	Philadelphia	NPAssn	745	77	77	13,742	R	15	27	June	No	Req	49	No	Jan
Jewish Hospital [1,3] ✦	Philadelphia	NPAssn	545	27	17	8,977	R	9	24	June	(94)	Req	62	No	Dec
Lankenau Hospital	Philadelphia	NPAssn	292	36	100	4,459	R	5	24	July	(95)	Req	48	No	Dec
Mercy Hospital [1]	Philadelphia	NPAssn	110	42	100	1,834	R	5	12	July	(96)	Req	16	$10	Jan
Methodist Hospital [1]	Philadelphia	Church	208	34	100	3,285	R	7	12	July	No	Req	43	No	Oct
Misericordia Hospital [1,3]	Philadelphia	Church	230	12	..	4,257	R	9	12	July	No	Req	41	No	Dec
Mount Sinai Hospital [1,3] ✦	Philadelphia	NPAssn	316	25	61	7,534	R	7	24	June	No	Req	55	No	Nov
Northeastern Hospital [1,3]	Philadelphia	NPAssn	117	13	..	2,706	R	4	12	July	No	Req	62	$20	Dec
Pennsylvania Hospital ✦	Philadelphia	NPAssn	560	26	68	8,508	R	12	24	JulySeptNov	(97)	Req	57	No	Fall
Philadelphia General Hospital [1,3] ✦	Philadelphia	City	2,736	95	100	25,389	R	30	24	July	(94)	Req	60	No	Oct
Presbyterian Hospital ✦	Philadelphia	Church	356	9	*	5,378	R	6	24	July	No	Req	82	No	Oct
St. Joseph's Hospital [1]	Philadelphia	Church	184	35	98	2,829	R	6	12	July	No	Req	41	No	Jan
St. Luke's and Children's Hospital	Philadelphia	NPAssn	259	27	60	4,802	R	9	12	July	No	Req	31	No	Nov
St. Mary's Hospital	Philadelphia	Church	250	44	30	4,645	R	8	12	July	No	Req	29	No	Fall
Temple University Hospital ✦	Philadelphia	NPAssn	437	43	99	9,951	R	9	24	June	(98)	Req	55	No	Nov
United States Naval Hospital	Philadelphia	Navy	650	100	100	7,271	R	8	12	August	(99)	Op	48	(b)	Aug
Woman's Hospital ✦	Philadelphia	NPAssn	150	46	100	3,605	R	6	12	JulySept	(100)	Op	56	No	Dec
Women's Homoeopathic Hospital [1]	Philadelphia	NPAssn	200	33	70	3,000	R	4	12	July	No	Req	51	$10	Dec
Allegheny General Hospital [1,3] ✦	Pittsburgh	NPAssn	595	51	..	9,350	R	16	12	July	No	Req	49	No	Fall
Mercy Hospital ✦	Pittsburgh	Church	718	30	30	12,599	R	24	12	July	(101)	Req	38	No	Fall
Montefiore Hospital ✦	Pittsburgh	NPAssn	275	34	50	7,118	R	10	12	July	No	Req	42	No	Oct
Passavant Hospital [1]	Pittsburgh	Church	140	49	100	2,414	R	5	12	July	No	Req	41	$10	Oct
Pittsburgh Hospital	Pittsburgh	NPAssn	208	32	41	4,321	R	6	12	July	No	Req	29	$25	Nov
Presbyterian Hospital ✦	Pittsburgh	NPAssn	150	35	60	3,116	R	18	12	July	(102)	Req	41	No	Jan
St. Francis Hospital ✦	Pittsburgh	Church	652	30	30	14,217	R	20	12	July	(103)	Req	22	No	Nov
St. John's General Hospital	Pittsburgh	NPAssn	225	22	30	4,718	R	5	12	July	No	Req	29	$25	Nov
St. Joseph's Hospital and Dispensary	Pittsburgh	Church	140	25	100	2,339	R	4	12	July	No	Req	26	$25	Jan
St. Margaret Memorial Hospital	Pittsburgh	Church	150	37	100	2,606	R	4	12	July	No	Req	44	$25	Jan
Shadyside Hospital	Pittsburgh	NPAssn	280	43	43	5,891	R	8	12	July	(103)	Req	24	No	Jan
South Side Hospital	Pittsburgh	NPAssn	225	32	61	4,924	R	7	12	July	No	Req	23	No	Jan

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Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Care	Percentage of Patients: For Teaching	Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
PENNSYLVANIA—Continued															
Western Pennsylvania Hospital [1,5]✦	Pittsburgh	NPAssn	661	36	..	9,591	R	20	12	July	No	Req 36	No		Nov
Pottsville Hospital [1]	Pottsville	NPAssn	172	67	..	3,478	R	5	12	July	No	Req 33		$25	Nov
Homeopathic Hospital	Reading	NPAssn	119	54	54	2,900	R	4	12	June	No	Req 35		$25	Jan
Reading Hospital [5]✦	Reading	NPAssn	289	49	49	6,561	R	10	12	July	No	Req 67		No	Nov
St. Joseph Hospital	Reading	Church	230	65	52	4,560	R	6	12	July	(104)	Req 34		(q)	Nov
Robert Packer Hospital✦	Sayre	NPAssn	325	55	60	7,630	R	10	12	July	No	Req 52		No	Nov
Moses Taylor Hospital	Scranton	NPAssn	120	..	100	2,070	R	3	12	July	(105)	Req 39		$15	Jan
Scranton State Hospital [1]	Scranton	State	307	96	96	3,006	R	8	12	July	No	Req 32		$8.33	Nov
Valley Hospital [1]	Sewickley	NPAssn	140	26	32	3,262	R	4	12	July	No	Req 32		$25	Jan
Uniontown Hospital	Uniontown	NPAssn	235	23	23	5,161	R	5	12	July	No	Req 32		$25	Jan
Washington Hospital	Washington	NPAssn	166	24	..	3,901	R	5	12	July	No	Req 32		$25	Oct
Chester County Hospital	West Chester	NPAssn	181	50	63	2,882	R	4	12	July	No	Op 32		$25	Jan
Mercy Hospital [1]	Wilkes-Barre	Church	220	55	95	4,531	R	6	12	July	No	Req 23		$40 yr	Nov
Wilkes-Barre General Hospital [1]	Wilkes-Barre	NPAssn	403	61	100	8,613	R	12	12	July	No	Req 31		No	Dec
Columbia Hospital [1]	Wilkinsburg	Church	217	25	53	3,519	R	6	12	July	No	Req 51		$20	Fall
Williamsport Hospital [1]	Williamsport	NPAssn	262	60	60	5,627	R	7	12	July	No	Req 40		$10	Dec
Windber Hospital [1]	Windber	NPAssn	117	10	100	3,144	R	3	12	July	No	Req 35		$25	Dec
York Hospital	York	NPAssn	219	59	..	5,335	R	8	12	July	No	Req 48		$25	Dec
RHODE ISLAND															
Memorial Hospital	Pawtucket	NPAssn	199	33	75	3,245	R	3	24	June	No	Req 17		No	Dec
Homeopathic Hospital	Providence	NPAssn	200	25	100	4,600	R	4	12	July	No	Req 33		$50	Nov
Rhode Island Hospital [2,5]✦	Providence	NPAssn	693	55	100	7,880	R	12	24	Monthly	(106)	Req 55		No	Nov
St. Joseph's Hospital	Providence	Church	350	40	50	5,378	R	3	24	JulyNov	No	Req 16		No	Nov
SOUTH CAROLINA															
Roper Hospital✦	Charleston	NPAssn	300	74	74	8,261	R	15	12	July	No	Req 37		$10	Nov
Columbia Hospital [1]	Columbia	County	305	26	26	8,048	R	7	12	July	No	Req 15		$35(e)	Nov
Greenville General Hospital	Greenville	City	267	47	47	6,189	R	5	12	July	No	Req 15		$15(k)	Dec
TENNESSEE															
Baroness Erlanger Hospital [5]✦	Chattanooga	CyCo	500	57	57	9,512	R	12	12	July	(107)	Req 27		$25	Nov
Knoxville General Hospital [5]✦	Knoxville	City	312	70	85	8,163	R	9	18	Quarterly	No	Req 45		$25	Varies
Baptist Memorial Hospital	Memphis	Church	500	38	38	15,858	R	8	18	(t)	No	None 20		$25	Mar Nov
John Gaston Hospital✦	Memphis	City	611	95	95	15,976	R	26	12&18	Monthly	No	Req 24		$20	Quarterly
Methodist Hospital✦	Memphis	Church	185	30	30	6,697	R	6	12	Quarterly	No	None 38		$50	.....
St. Joseph Hospital	Memphis	Church	240	30	*	6,323	R	7	12	(n)	No	None 16		$35	Quarterly
George W. Hubbard Hospital [1]✦	Nashville	NPAssn	186	60	90	2,571	R	8	12	July	No	Req 35		$15(g)	Jan
Nashville General Hospital [5]✦	Nashville	City	305	90	90	7,152	R	11	12	July	No	Req 42		$20	Dec
St. Thomas Hospital	Nashville	Church	250	33	..	6,347	R	7	12	July	No	None 15		$40	Sept
Vanderbilt University Hospital [5]✦	Nashville	NPAssn	391	..	80	7,226	S	21	12	July	(108)	Req 62		No	Nov
TEXAS															
Baylor University Hospital✦	Dallas	Church	467	15	34	15,343	R	18	12	July	No	Req 35		$25	Nov
Methodist Hospital [1,5]	Dallas	Church	140	7	7	4,141	R	5	12	July	No	Req 32		$25(e)	Nov
Parkland Hospital [1,5]✦	Dallas	CyCo	436	95	98	10,771	R	12	12	JanJuly	(109)	Req 31		$10	Nov
St. Paul's Hospital	Dallas	Church	300	13	..	10,587	R	10	12	July	No	Req 15		$25	Oct
El Paso City-County Hospital [5]	El Paso	CyCo	252	95	100	4,330	R	5	12	July	No	Req 28		$25(g)	Nov
William Beaumont General Hospital	El Paso	Army	679	100	100	4,967	R	†	12	July	No	Req ..		$60	.....
City and County Hospital [5]	Fort Worth	CyCo	194	100	100	4,236	R	7	12	July	No	Req 49		$25	Dec
Harris Memorial Methodist Hospital [1]	Fort Worth	Church	261	23	100	4,832	R	6	12	July	No	None 58		$25(g)	Nov
St. Joseph's Hospital	Fort Worth	Church	221	11	11	5,693	R	5	12	July	No	None 26		$25(d)	Nov
John Sealy Hospital [1]✦	Galveston	City	504	73	76	6,644	R	12	12	July	No	Req 56		No	Nov
Hermann Hospital	Houston	NPAssn	156	75	..	4,568	R	3	24	July	No	Req 49		$30-30	Nov
Jefferson Davis Hospital [1,5]✦	Houston	CyCo	500	100	100	13,227	R	12	24	July	(110)	Req 34		$25-30	Nov
Medical and Surgical Memorial Hospital [1]	San Antonio	NPAssn	130	7	..	3,850	R	4	12	July	No	Req 48		$25	Nov
Nix Hospital [1]	San Antonio	Corp	169	..	..	4,956	R	4	12	July	(111)	None 22		$50	.....
Robert B. Green Memorial Hospital [5]	San Antonio	County	218	99	..	5,651	R	13	12	July	No	Req 44		$10	Nov
Santa Rosa Hospital	San Antonio	Church	312	25	12	6,621	R	7	12	July	No	Req 17		$25	Nov
Station Hospital (Fort Sam Houston)	San Antonio	Army	1,023	100	100	7,338	R	†	12	July	No	Req ..		$60	.....
Kings Daughters Hospital [1]	Temple	NPAssn	118	..	..	3,160	R	3	12	July	No	Req 28		$50	Nov
Scott and White Hospital [5]	Temple	Corp	175	..	*	3,490	R	8	12	July	(113)	Req 39		$50	Fall
UTAH															
Thomas D. Dee Memorial Hospital	Ogden	Church	240	10	*	6,066	R	6	12	July	No	Req 26		$25	Nov
Dr. W. H. Groves Latter-Day Saints Hosp.	Salt Lake City	Church	454	18	..	8,319	R	6	24	July	(114)	None 34		$15-20(r)	Nov
Holy Cross Hospital	Salt Lake City	Church	250	5	3	4,110	R	3	12	JanJuly	No	None 24		$15(o)	.....
St. Mark's Hospital [1]	Salt Lake City	Church	164	23	*	3,405	R	3	12	July	No	None 19		$25(e)	Nov
Salt Lake County General Hospital	Salt Lake City	County	258	94	94	4,211	R	4	24	July	No	Req 16		$15-25(ee)	Nov
VERMONT															
Bishop DeGoesbriand Hospital [1]	Burlington	Church	122	45	*	3,747	R	3	12	July	No	None 38		$25	Jan
Mary Fletcher Hospital [5]✦	Burlington	NPAssn	150	25	55	5,646	R	6	12	JulySept	No	None 40		$25	Nov
VIRGINIA															
University of Virginia Hospital✦	Charlottesville	State	411	27	67	9,294	S	15	12	July	(115)	Req 41		No	Nov
Hospital of St. Vincent de Paul	Norfolk	Church	250	42	75	4,479	R	5	12	July	No	Req 26		$25	Nov
Norfolk General Hospital✦	Norfolk	NPAssn	267	28	55	7,311	R	7	12	JulyOct	(116)	Req 33		$25	Nov
United States Marine Hospital [5]	Norfolk	USPHS	360	100	100	3,376	R	8	12	July	(117)	Op 65		$62.50	June
Norfolk Naval Hospital	Portsmouth	Navy	780	100	100	5,324	R	4	12	July	No	Req 31		(b)	July
Johnston-Willis Hospital [1]	Richmond	Corp	132	4	40	4,947	R	4	12	July	No	Req 41		$15	Oct
Medical College of Virginia, Hospital Division [1,5]✦ (Memorial, Dooley and St. Philip Hospitals)	Richmond	NPAssn	512	5	90	10,767	R&S	24	12	July	(118)	Req 35		No	Dec
Stuart Circle Hospital [1]	Richmond	Corp	97	2	*	2,825	R	4	12	July	No	Req 46		$25	Dec
Jefferson Hospital✦	Roanoke	NPAssn	123	20	*	3,603	R	2	12	July	No	Req 34		$50	Dec
Lewis-Gale Hospital	Roanoke	NPAssn	134	25	..	3,174	R	4	12	July	No	Req 38		$50	Dec

Numerical and other references will be found on page 762

Name of Hospital	Location	Control	Capacity	Percentage of Patients: Free Cases	Percentage of Patients: For Teaching	Percentage of Patients: Total Patients Treated	Type of Internship	Interns Appointed Annually	Length of Service in Months	Service Commences	Affiliated Service	Outpatient Service	Autopsy Percentage	Salary per Month	Appointments Made
WASHINGTON															
Columbus Hospital [1]	Seattle	Church	230	..	..	2,693	R	4	12	July	(119)	Req	51	$30	Dec
King County Hospital Unit No. 1 [1,3]✚ (Harborview)	Seattle	County	445	100	100	11,567	R	12	24	July	No	Req	47	$30	Nov
Providence Hospital	Seattle	Church	380	3	..	7,867	R	5	12	July	(120)	Req	20	$30	Dec
Seattle General Hospital	Seattle	NPAssn	120	..	..	3,605	R	3	12	July	No	None	20	$30	Dec
Swedish Hospital	Seattle	NPAssn	320	..	..	6,914	R	10	12	JulyOct	(121)	Req	48	$30	Nov
United States Marine Hospital [3]	Seattle	USPHS	400	100	100	3,245	R	8	12	July	(120)	Req	67	$62.50	May
Virginia Mason Hospital	Seattle	NPAssn	173	..	..	4,085	R	4	12	June	No	Req	34	$30(e)	Oct
Deaconess Hospital	Spokane	Church	215	..	20	5,108	R	4	12	July	(122)	None	15	$25	Nov
Sacred Heart Hospital	Spokane	Church	400	10	..	9,508	R	9	12	July	(122)	None	30	$35	Sept
St. Luke's Hospital	Spokane	NPAssn	178	..	..	3,823	R	4	12	July	(123)	None	28	$35	July
Pierce County Hospital	Tacoma	County	220	95	100	4,398	R	3	12	July	No	Req	39	$45	Nov
St. Joseph's Hospital	Tacoma	Church	312	19	17	4,121	R	4	12	July	No	Req	47	$35	Oct
Tacoma General Hospital	Tacoma	NPAssn	220	5	75	5,112	R	4	12	July	No	Req	33	$40	Nov
WEST VIRGINIA															
Charleston General Hospital [1]✚	Charleston	NPAssn	275	10	75	7,462	R	9	12	July	No	Req	39	$25	Nov
Kanawha Valley Hospital [1]	Charleston	Corp	135	5	80	2,611	R	4	12	July	No	Req	42	$40	Nov
Chesapeake and Ohio Hospital	Huntington	NPAssn	130	..	..	2,899	R	3	12	July	No	Req	39	$37.50	Nov
St. Mary's Hospital	Huntington	Church	220	20	..	4,991	R	4	12	July	No	Req	20	$25	Dec
Camden-Clark Memorial Hospital	Parkersburg	City	185	..	80	2,585	R	3	12	July	No	None	45	$42(e)	March
St. Joseph's Hospital	Parkersburg	Church	135	5	55	2,513	R	3	12	July	No	Req	22	$60	Nov
Ohio Valley General Hospital [3]	Wheeling	NPAssn	275	6	100	6,356	R	8	12	July	No	Req	19	$25	Nov
Wheeling Hospital	Wheeling	Church	280	9	..	3,280	R	4	12	July	No	None	26	$40	Dec
WISCONSIN															
St. Elizabeth Hospital	Appleton	Church	200	25	..	4,011	R	3	12	July	No	None	34	$25	Dec
Luther Hospital [1]	Eau Claire	NPAssn	175	10	100	3,462	R	4	12	July	(124)	None	52	$25(e)	Nov
St. Agnes Hospital	Fond du Lac	Church	263	12	*	5,901	R	4	12	June	No	None	24	$25	Varies
La Crosse Lutheran Hospital	La Crosse	Church	144	4	..	2,591	M	1	12	July	No	None	38	$50	Nov
St. Francis Hospital	La Crosse	Church	310	33	100	5,500	R	4	12	July	No	Req	45	$20	Nov
Madison General Hospital [1]	Madison	NPAssn	185	20	100	5,352	R	6	12	July	No	None	60	$25	Nov
Methodist Hospital	Madison	Church	120	4	..	2,354	R	3	18	JulyOct	No	Req	21	$30	NovMay
St. Mary's Hospital	Madison	Church	215	20	75	5,731	R	5	12	June	No	None	49	$25	Varies
State of Wisconsin General Hospital [1]✚	Madison	State	672	84	93	12,263	R	24	12	July	No	Req	64	No	Nov
St. Joseph's Hospital	Marshfield	Church	175	15	100	3,667	R	3	12	July	No	None	19	$50	Dec
Columbia Hospital ✚	Milwaukee	NPAssn	175	1	..	3,290	R	5	24	July	(125)	None	56	$25	Nov
Evangelical Deaconess Hospital [3]	Milwaukee	Church	163	5	100	4,169	R	5	12	July	(126)	None	36	$25(e)	Nov
Milwaukee Hospital	Milwaukee	Church	265	15	*	6,850	R	7	12	July	No	Req	49	$25	Nov
Misericordia Hospital	Milwaukee	Church	150	8	..	3,212	R	3	12	July	No	None	18	$50	Dec
Mount Sinai Hospital	Milwaukee	NPAssn	190	13	13	6,119	R	7	12	July	No	Req	37	$25	Nov
St. Joseph's Hospital ✚	Milwaukee	Church	397	22	..	8,159	R	10	12	June	No	Req	30	$17	Dec
St. Luke's Hospital	Milwaukee	Church	130	2	2	3,625	R	3	12	July	No	None	32	$50	Jan
St. Mary's Hospital ✚	Milwaukee	Church	230	18	75	6,352	R	5	12	July	No	None	26	$25	Oct
Mercy Hospital [1]	Oshkosh	Church	219	40	100	2,948	R	4	12	July	No	None	25	$35	Sept
St. Mary's Hospital	Racine	Church	213	2	*	4,705	R	2	12	July	No	None	32	$25	Oct
St. Mary's Hospital	Superior	Church	200	32	35	1,893	R	2	12	July	No	None	34	$25	Oct
Milwaukee County Hospital [1]✚	Wauwatosa	County	1,125	98	100	20,179	R	40	12	June	(127)	Req	37	$10	Nov
CANAL ZONE															
Gorgas Hospital	Ancon	Fed	880	10	..	12,060	R	10	12	July	No	None	46	$75	Jan
HAWAII															
Queen's Hospital ✚	Honolulu	NPAssn	314	..	..	10,301	R	7	18	Quarterly	(128)	None	62	$45-90	Jan
PHILIPPINES															
Philippine General Hospital [1]	Manila	Gov't	778	92	92	23,731	R	107(ff)	12	March	No	Req	73	No	.....
PUERTO RICO															
Bayamon Charity District Hospital [1]	Bayamon	Gov't	314	100	100	.....	R	5	12	July	No	Req	61	$300yr	Jan
Presbyterian Hospital [1]	San Juan	Church	137	57	57	2,353	R	4	12	July	No	Req	25	$10	Dec

Numerical and other references will be found on page 762

HOSPITALS APPROVED FOR INTERNSHIPS IN THE DOMINION OF CANADA

For the benefit of graduates of approved medical colleges who desire an internship in Canada, the Council on Medical Education and Hospitals of the American Medical Association has declared that hospitals which conform to the standards of the Department of Hospital Service of the Canadian Medical Association should be regarded as giving an internship equivalent in educational value to that offered by hospitals in the United States approved for intern training by the Council. It is understood, however, that this statement applies only to hospitals that are unqualifiedly "Approved" under the Canadian plan and does not apply to that group referred to as "Commended."

The following list of hospitals, revised to June 1, 1940, has been furnished by the Department of Hospital Service.

Name of Hospital	Location
Victoria General Hospital	Halifax, N. S.
St. John General Hospital	St. John, N. B.
Hospital du St. Sacrament	Quebec, Que.
Hotel Dieu de Quebec	Quebec, Que.
Hospital of the Infant Jesus	Quebec, Que.
Jeffrey Hale's Hospital	Quebec, Que.
Children's Memorial Hosp.	Montreal, Que.
Homoeopathic Hospital	Montreal, Que.
Hospital Notre Dame	Montreal, Que.
Hospital Ste. Justine	Montreal, Que.
Hotel Dieu of St. Joseph	Montreal, Que.
Hospital Ste. Luc	Montreal, Que.
Jewish General Hospital	Montreal, Que.
Montreal General Hospital	Montreal, Que.
Royal Victoria Hospital	Montreal, Que.
St. Mary's Hospital	Monteral, Que.
Woman's General Hospital, (Westmount)	Montreal, Que.

Name of Hospital	Location
McKellar General Hospital	Fort William ,Ont.
Hamilton General Hospital	Hamilton, Ont.
St. Joseph's Hospital	Hamilton, Ont.
Ottawa Civic Hospital	Ottawa, Ont.
Ottawa General Hospital	Ottawa, Ont.
Kingston General Hospital	Kingston, Ont.
Hospital for Sick Children	Toronto, Ont.
Mount Sinai Hospital	Toronto, Ont.
St. Joseph's Hospital	Toronto, Ont.
St. Michael's Hospital	Toronto, Ont.
Toronto East General Hosp.	Toronto, Ont.
Toronto General Hospital	Toronto, Ont.
Toronto Western Hospital	Toronto, Ont.
Women's College Hospital	Toronto, Ont.
Brantford General Hospital	Brantford, Ont.
St. Joseph's Hospital	London, Ont.
Victoria Hospital	London, Ont.
Metropolitan General Hosp.	Windsor, Ont.

Name of Hospital	Location
Hotel Dieu of St. Joseph Hosp.	Windsor, Ont.
Children's Hospital	Winnipeg, Man.
Misericordia Hospital	Winnipeg, Man.
Winnipeg General Hospital	Winnipeg, Man.
St. Boniface Hospital	St. Boniface, Man.
Regina Grey Nuns' Hospital	Regina, Sask.
Regina General Hospital	Regina, Sask.
St. Paul's Hospital	Saskatoon, Sask.
Saskatoon City Hospital	Saskatoon, Sask.
Holy Cross Hospital	Calgary, Alta.
Edmonton General Hospital	Edmonton, Alta.
Misericordia Hospital	Edmonton, Alta.
Royal Alexandra Hospital	Edmonton, Alta.
University of Alberta Hosp.	Edmonton, Alta.
St. Paul's Hospital	Vancouver, B. C.
Vancouver General Hospital	Vancouver, B. C.
Royal Jubilee Hospital	Victoria, B. C.
St. Joseph's Hospital	Victoria, B. C.

NOTES

* Majority of patients available for teaching purposes.
† Internships available for one year beginning July 1, 1940; thereafter internships depend upon appropriations by Congress.
(a) In lieu of maintenance.
(b) Salary established by government pay tables.
(c) $30 per month second year.
(d) Bonus of $60.

1. Women interns admitted.
2. Women interns only.
3. Dental interns employed.

(e) Bonus of $100.
(f) January, March, July, September, November.
(g) Bonus of $120.
(h) Bonus of $180.
(i) Bonus of $10.
(j) Senior internships available.
(k) Bonus of $25.
(n) Every two months.
(o) Bonus of $50.
(p) Bonus of $300.
(q) Bonus of $150.
(r) Bonus of $75.
(s) Bonus of $24.
(t) Every six weeks.
(u) $10 per month second year.
(w) $25 per month first year; $50 per month second year; bonus of $100.
(x) Bonus of $200.
(y) $30 per month second year.
(z) Bonus of $125.
(aa) Bonus of $30.
(bb) February, June, July, October.
(cc) Bonus of $250.
(dd) $15 per month first year; $30 per month second year; bonus of $60 each year.
(ee) Bonus of $240.
(ff) All internships reserved for the fifth year students of the College of Medicine, University of the Philippines.

Affiliation as Referred to in Column Headed: "Affiliated Service"

4. Patton State Hospital, Patton, psychiatry.
5. California Babies Hospital, Georgia Receiving Hospital, Los Angeles, pediatrics, emergency.
6. Los Angeles Maternity Service.
7. Children's Hospital, Los Angeles Maternity Service.
8. Fairmont Hospital, San Leandro, and Arroyo-Del Valle Sanatorium, Livermore, medicine, surgery, tuberculosis.
9. Mercy Hospital, San Diego, obstetrics, gynecology, pediatrics.
10. Laguna Honda Home Infirmary, San Francisco, chronic diseases; Hassler Health Home, Redwood City, tuberculosis.
11. St. Francis Hospital, Stanford University Hospitals, San Francisco, obstetrics, pediatrics.
12. Franklin Hospital, San Francisco, obstetrics, gynecology, pediatrics.
13. Santa Barbara General Hospital, outpatient service.
14. Boulder County Hospital, Boulder, obstetrics, surgery; Porter Sanitarium and Hospital, Denver, general.
15. Gallinger Municipal Hospital, Washington, pediatrics, tuberculosis, communicable diseases.
16. Gallinger Municipal Hospital, Children's Hospital, Washington, obstetrics, pediatrics.
17. Grady Hospital, Atlanta.
18. De Paul Hospital, St. Louis, pathology.
19. Misericordia Hospital and Home for Infants, Chicago, obstetrics.
20. Municipal Contagious Disease Hospital, Chicago; Winfield Sanatorium, Winfield, tuberculosis.
21. Chicago Maternity Center, obstetrics, gynecology, pediatrics.
22. East Moline State Hospital, psychiatry; Rock Island County Tuberculosis Sanatorium.
23. Rockford Municipal Tuberculosis Sanatorium.
24. Rotation service established between Broadlawns and approved private hospitals.
25. Watkins Memorial Hospital, Lawrence.
26. Sedgwick County Hospital, Wichita, general, outpatient service.
27. Salvation Army Home and Hospital, Sedgwick County Hospital, Wichita, obstetrics, general.
28. Children's Free Hospital, Louisville City Hospital, pediatrics, obstetrics, gynecology.
29. Children's Free Hospital, Louisville, pediatrics; Waverly Hills Sanatorium, Waverly Hills, tuberculosis.
30. Charity Hospital, New Orleans, obstetrics, gynecology, pediatrics.
31. Shreveport Charity Hospital, obstetrics.
32. Johns Hopkins Hospital, Baltimore, pathology.
33. University Hospital, Baltimore, pathology.
34. University Hospital, Sydenham Hospital, Baltimore, pediatrics, obstetrics, communicable diseases.
35. James Lawrence Kernan Hospital and Industrial School for Crippled Children, Baltimore.
36. Sydenham Hospital, Baltimore, communicable diseases.
37. Boston City Hospital, neurosurgery.
38. Children's Hospital, Boston, pediatrics; Worcester State Hospital, Worcester, psychiatry.
39. Evangeline Booth Maternity Hospital and Home, Boston.
40. Norfolk County Hospital, South Braintree, tuberculosis.
41. Shriners Hospital for Crippled Children, Health Department Hospital, Wesson Maternity Hospital, Springfield, orthopedics, communicable diseases, obstetrics.
42. Health Department Hospital, Wesson Maternity Hospital, Springfield, communicable diseases, obstetrics.
43. Herman Kiefer Hospital, Detroit.
44. Herman Kiefer Hospital, Children's Hospital, Detroit, communicable diseases, tuberculosis, obstetrics, orthopedics.
45. Herman Kiefer Hospital, Detroit, communicable diseases, tuberculosis; St. Joseph's Retreat, Dearborn, neurology.
46. Kalamazoo State Hospital, Kalamazoo, psychiatry.
47. Ingham Sanatorium, Lansing tuberculosis; Jackson County Isolation Hospital, Jackson, communicable diseases.
48. Ingham Sanatorium, Boys' Vocational School Hospital, Lansing, tuberculosis, otolaryngology.
49. Oakland County Tuberculosis Sanatorium, Pontiac State Hospital, Pontiac, tuberculosis, psychiatry.
50. Miller Memorial Hospital, Duluth, outpatient service.
51. Gillette State Hospital for Crippled Children, St. Paul.
52. Shriners Hospital for Crippled Children, Minneapolis.
53. Children's Hospital, St. Paul, pediatrics.
54. Gillette State Hospital for Crippled Children; Charles T. Miller Hospital, St. Paul, outpatient service.
55. Kansas City Municipal Tuberculosis Hospital.
56. Shriners Hospital for Crippled Children, City Isolation Hospital, St. Louis Children's Hospital, Barnard Free Skin and Cancer Hospital, St. Louis.
57. Jewish Sanatorium, Robertson, tuberculosis; City Isolation Hospital, St. Louis, communicable diseases; St. Louis City Hospital, psychiatry.
58. Alexian Brothers Hospital, St. Louis, outpatient service.
59. Robert Koch Hospital, City Isolation Hospital, St. Louis, tuberculosis, communicable diseases.
60. Robert Koch Hospital, City Isolation Hospital, City Sanitarium, St. Louis, tuberculosis, communicable diseases, psychiatry.
61. St. Elizabeth Hospital, Elizabeth, obstetrics, gynecology, pediatrics.
62. Bergen Pines, Bergen County Hospital, Ridgewood, tuberculosis, communicable diseases.
63. Margaret Hague Maternity Hospital, Hudson County Tuberculosis Hospital, Jersey City.
64. Margaret Hague Maternity Hospital, Jersey City.
65. New Jersey State Hospital, Marlboro, psychiatry.
66. Fairview Sanatorium, New Lisbon, tuberculosis.
67. Anthony N. Brady Maternity Hospital, Albany.
68. Kingston Avenue Hospital, Brooklyn, communicable diseases.
69. Brooklyn Thoracic Hospital, tuberculosis.
70. Emergency Hospital of the Sisters of Charity, St. Mary's Infant Asylum Maternity Hospital, Providence Retreat, Buffalo.
71. Edward J. Meyer Memorial Hospital, Buffalo, pediatrics, communicable diseases, psychiatry.
72. Lincoln Hospital, New York City, obstetrics.
73. Binghamton State Hospital, Binghamton, psychiatry.
74. Ulster County Tuberculosis Hospital, Kingston.
75. Jewish Maternity Hospital, New York City.
76. Berwind Free Maternity Clinic, New York City; New York State Hospital, Ray Brook, tuberculosis.
77. Strong Memorial Hospital, Rochester, surgery.
78. Misericordia Hospital, New York City, obstetrics, pediatrics.
79. Rotation service established between Hospital of the Good Shepherd, Syracuse Memorial Hospital, City Hospital and Syracuse Psychopathic Hospital.
80. Cass County Hospital, Fargo, obstetrics, otolaryngology.
81. Children's Hospital, Akron, pediatrics.
82. Molly Stark Sanatorium, Canton, tuberculosis; Massillon State Hospital, Massillon, psychiatry.
83. Children's Hospital, Cincinnati, pediatrics.
84. Hamilton County Tuberculosis Sanatorium, Hamilton County Home and Chronic Disease Hospital, Cincinnati.
85. Longview State Hospital, Cincinnati, psychiatry.
86. Cincinnati General Hospital, pediatrics, otolaryngology.
87. St. Ann's Maternity Hospital, Cleveland.
88. Children's Hospital, Columbus, pediatrics.
89. St. Ann's Infant Asylum and Maternity Hospital, Children's Hospital, Columbus, obstetrics, pediatrics.
90. Children's Hospital, Columbus State Hospital, pediatrics, psychiatry.
91. Stillwater Sanatorium, Dayton, tuberculosis.
92. Shriners Hospital for Crippled Children, Portland.
93. Hospital of the University of Pennsylvania, Philadelphia, obstetrics.
94. Philadelphia Hospital for Contagious Diseases.
95. Children's Hospital of the Mary J. Drexel Home, Philadelphia, pediatrics.
96. Henry Phipps Institute of the University of Pennsylvania, Philadelphia, tuberculosis.
97. Children's Hospital, Philadelphia, pediatrics.
98. Shriners Hospital for Crippled Children, Philadelphia Hospital for Contagious Diseases.
99. St. Vincent's Hospital for Women and Children, Philadelphia, obstetrics, gynecology, pediatrics.
100. Pennsylvania Hospital, Department for Mental and Nervous Diseases, Philadelphia.
101. Rosella Foundling and Maternity Hospital, Municipal Hospital for Contagious Diseases, Pittsburgh.
102. Elizabeth Steel Magee Hospital, Children's Hospital, Eye and Ear Hospital, Woman's Hospital, Pittsburgh.
103. Municipal Hospital for Contagious Diseases, Pittsburgh.
104. Berks County Tuberculosis Sanatorium, Reading.
105. Scranton State Hospital, obstetrics.
106. Providence Lying-In Hospital.
107. T. C. Thompson Children's Hospital, Pine Breeze Sanatorium, Chattanooga, pediatrics, tuberculosis.
108. Willard Parker Hospital, New York City, pediatrics.
109. Woodlawn Hospital, Dallas, tuberculosis.
110. Houston Tuberculosis Hospital.
111. Salvation Army Women's Home, Mission Home, San Antonio, obstetrics.
112. St. Mary's Group of Hospitals includes the Firmin Desloge Hospital, St. Mary's Hospital and Mount St. Rose Sanatorium.
113. Gulf, Colorado and Santa Fe Hospital, Temple, general.
114. Utah State Hospital, Provo, psychiatry, general medicine.
115. Blue Ridge Sanatorium, Charlottesville, tuberculosis.
116. Henry A. Wise Hospital for Contagious Diseases, Norfolk.
117. Norfolk General Hospital, Florence Crittenton Home, Children's Clinic of the Kings Daughters, Norfolk, obstetrics, pediatrics.
118. Pine Camp Hospital, Brook Hill, tuberculosis; Crippled Children's Hospital, Richmond.
119. King County Hospital, Seattle, outpatient service; Firland Sanatorium and Isolation Hospital, Richmond Highlands, tuberculosis.
120. King County Hospital, Seattle.
121. Firland Sanatorium and Isolation Hospital, Richmond Highlands, tuberculosis, communicable diseases; Children's Orthopedic Hospital, Seattle, pediatrics, orthopedics.
122. Edgecliff Sanatorium, Spokane, tuberculosis.
123. Edgecliff Sanatorium, Salvation Army Women's Hospital and Home, Spokane, tuberculosis, obstetrics.
124. Mount Washington Sanatorium, Eau Claire, tuberculosis.
125. Milwaukee Children's Hospital, South View Hospital, Milwaukee, pediatrics, communicable diseases; Sunny View Sanatorium, Winnebago, tuberculosis.
126. Milwaukee Children's Hospital, pediatrics.
127. South View Hospital, Milwaukee, communicable diseases.
128. Kaulkeolani Children's Hospital, Honolulu.
129. Ingham Sanatorium, Lansing, tuberculosis.
130. Woman's Hospital, Pasadena, obstetrics.
131. Western Oklahoma Tuberculosis Sanatorium, Clinton.

APPROVED RESIDENCIES AND FELLOWSHIPS

Council on Medical Education and Hospitals of the American Medical Association

Hospitals, 587; Residencies, 4,392; Fellowships, 726

The following institutions approved by the Council on Medical Education and Hospitals are considered in position to furnish acceptable training in various specialties as indicated below. Residencies in specialties, as defined by the Council, are straight services of one or more years following an approved internship. A fellowship is a form of apprenticeship which in some cases is indistinguishable from a residency, although it usually offers greater opportunity for the study of basic sciences and research. Ordinarily a fellowship is a university rather than a hospital appointment. Mixed residencies are general hospital assignments following internship. They include services classified as general residencies and chief residencies.

The star (*) indicates hospitals that are also approved for the training of interns. All hospitals on the approved intern list are likewise accredited for general or mixed residencies.

INDEX TO LIST

	Page
1. Anesthesiology	763
2. Cardiology	763
3. Communicable diseases	764
4. Dermatology and syphilology	764
5. Epilepsy	764
6. Fractures	764
7. Gynecology	764
8. Malignant diseases	765
9. Medicine	765
10. Mental deficiencies	767
11. Mixed residency	767
12. Neurology	768
13. Neurosurgery	768
14. Obstetrics	768
15. Obstetrics-gynecology	769
16. Ophthalmology	770
17. Ophthalmology otolaryngology	771
18. Orthopedic surgery	772
19. Otolaryngology	773
20. Pathology	774
21. Pediatrics	775
22. Physical therapy	777
23. Plastic surgery	777
24. Psychiatry	777
25. Radiology	778
26. Surgery	780
27. Thoracic surgery	782
28. Traumatic surgery	782
29. Tuberculosis	782
30. Urology	783

1. ANESTHESIOLOGY

Revision of list is now taking place in collaboration with the American Board of Anesthesiology

		Chief of Service	Inpatients Treated *	Total Anesthetics	Inhalation Anesthetics	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [6]	Autopsies
Los Angeles County Hospital *[1]	Los Angeles	A. E. Guedell	50,715	12,202	4,872	$75	2	0	0	1/1	1	3,968	2,025
White Memorial Hospital *[1]	Los Angeles	L. D. Lee	7,024	4,176	1,517	$80	1	0	0	7/1	1-3	225	98
Stanford University Hospital *[1]	San Francisco	A. Dutton	9,037	4,926	3,396	$25	0	2	0	7/1	1+	213	122
Hartford Hospital *[1]	Hartford, Conn.	R. M. Tovell	16,015	11,927	7,185	$50	8	0	0	1/1&7/1	2	570	276
University Hospital*	Augusta, Ga.	P. P. Volpitto	8,057	1,700	1,200	$25	1	0	0	7/1	1-2	400	157
Michael Reese Hospital *	Chicago	B. B. Lennon	17,570	13,496	11,022	$50	2	0	0	7/1	2	520	308
Research and Educational Hospital *[1]	Chicago	W. H. Cassels	5,831	1,257	1,068	$50	2	0	0	7/1&9/1	1-3	208	178
University of Chicago Clinics *[1]	Chicago	H. L. Adams	10,776	3,426	2,098	$100	1	4	0	7/1	1-2	243	186
Methodist Hospital *	Indianapolis	J. M. Whitehead	23,917	11,864	9,237	$75	1	2	0	7/1	1-2	514	164
University Hospitals *[1]	Iowa City	S. C. Cullen	10,176	8,697	4,423	$21	4	4	0	7/1	3	511	306
Boston City Hospital *[1]	Boston	W. A. Noonan	42,903	9,965	4,557	$50	1	1	0	Varies	1+	2,093	800
Lahey Clinic	Boston	P. D. Woodbridge	7,640	7,595	3,501	$100[c]	0	0	4	1/1&7/1	2-3	181	86
Massachusetts General Hospital *[1]	Boston	H. K. Beecher	15,352	10,574	5,396	$42	1	0	0	7/1	1	547	228
Massachusetts Memorial Hospitals *[1]	Boston	E. F. Howard	7,572	3,658	2,209	$50	2	0	0	1/1&7/1	1	173	118
Harper Hospital *	Detroit	F. J. Murphy	17,089	11,869	6,201	$45	0	1	0	7/1	1	441	113
University Hospitals *[1]	Minneapolis	R. Knight	9,530	4,593	3,298	$50	0	0	2	7/1	1-3	450	328
Mayo Foundation	Rochester, Minn.	(See page 784)											
Jersey City Hospital *	Jersey City, N. J.		17,642	7,160	4,508	$100	1	1	0	7/1	1	1,126	181
Albany Hospital *[1]	Albany, N. Y.	F. A. D. Alexander	12,200	4,891	4,392	$50	1	2	0	7/1	1	452	308
Bellevue Hospital *[1]	New York City	E. A. Rovenstine	64,566	.....	.....	Varies	11[e]	0	0	Varies	3	2,505	786
Flower-Fifth Avenue Hospital *	New York City	D. E. Brace	8,810	4,514	3,538	$50	1	0	0	7/1	1	215	77
French Hospital *	New York City	S. Lesinger	5,847	3,216	2,154	$50	1	0	1	10/1	1	189	63
Lincoln Hospital *	New York City	P. M. Wood	9,666	4,263	3,080	$100	2	0	0	7/1	1-2	812	267
Metropolitan Hospital *	New York City	D. E. Brace	13,151	4,539	2,972	$100	3	0	0	7/1	1+	989	283
New York Post-Graduate Medical School and Hospital*	New York City	M. C. Peterson	9,146	5,323	4,459	$50	1	4	0	7/1&11/1	2	258	109
Presbyterian Hospital *[1]	New York City	V. Apgar	17,449	9,984	9,000	$50	5	0	0	Varies	1	538	262
St. Luke's Hospital*[1]	New York City	G. E. Burford	8,457	6,964	3,652	$100	4	0	0	Varies	1-3	308	160
St. Vincent's Hospital *	New York City	G. H. Van Gilluwe	10,197	2,569	1,910	$75	1	1	0	7/1	1	415	156
Grasslands Hospital *[1]	Valhalla, N. Y.	R. B. Hammond	5,798	1,502	984	$75	1	1	0	7/1	1	484	330
Huron Road Hospital *	East Cleveland, O.	R. J. Whitacre	8,371	5,759	3,601	$40	1	1	0	7/1	1-2	229	108
State University and Crippled Children's Hospitals *	Oklahoma City	H. E. Doudna	6,532	3,756	3,167	$50	3	0	0	7/1	1	270	149
University of Oregon Medical School Hospitals and Clinics *	Portland	J. Hutton	7,569	4,746	3,354	$40	2	0	0	7/1	2	649	407
Hahnemann Hospital *	Philadelphia	J. M. Godfrey	12,407	7,310	4,742	$50	2	0	0	9/1	1	645	235
Presbyterian Hospital *	Philadelphia	J. P. North	5,378	3,250	2,900	$50	1	0	0	6/1	1+	248	204
Rhode Island Hospital *	Providence	M. Saklad	7,890	6,182	3,391	$50	3	0	0	7/1	2	525	280
State of Wisconsin General Hospital *[1]	Madison	R. M. Waters	12,263	4,968	4,208	$25	3	3	0	7/1	3	353	227
Columbia Hospital *	Milwaukee	H. A. Cunningham	3,561	.....	.....	$50	1	0	0	7/1	1	112	68

2. CARDIOLOGY

		Chief of Service	Inpatients Treated *	Per Cent Fwd *	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [6]	Autopsies
Indiana University Medical Center *[1]	Indianapolis	G. S. Bond	.....	80	245	$33	1	0	0	7/1	1-2	...	...
House of the Good Samaritan	Boston	W. D. Smith	246	100	798	$50	1	0	0	7/1	1-3	16	8
Henry Ford Hospital*	Detroit	F. J. Smith	671	28	6,318	$130[c]	1	0	0	7/1	1-3	76	29
Pennsylvania Hospital *	Philadelphia	W. D. Stroud	.....	26	4,046	$35	0	0	1	7/1	1-2	...	...
St. Francis Hospital *	Pittsburgh	B. Z. D'Zmura	437	30	46	$50	1	0	0	9/1	1	108	10
Rhode Island Hospital *	Providence	F. T. Fulton	2,928	55	826	$50	1	0	0	7/1	1	...	...

Numerical and other references will be found on page 784.

3. COMMUNICABLE DISEASES

		Chief of Service	Inpatients Treated [a]	Per Cent Free [a]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [a]	Autopsies
Los Angeles County Hospital [a1]	Los Angeles	P. Hamilton	3,215	100	.....	$175	3	0	0	Varies	1+	180	84
Hospital for Children [a2]	San Francisco	E. B. Shaw	228	4	.....	$50	0	0	1	7/1	1	10	4
Municipal Hospitals *	Hartford, Conn.	C. Thenebe	546	..	.....	$125	1	0	0	7/1	1	19	5
Cook County Hospital [a2]	Chicago	A. L. Hoyne	175	63	9,500	None	1	0	1	7/1	1-3	3	3
Municipal Contagious Disease Hospital	Chicago	A. L. Hoyne	4,223	99	.....	$100	6	0	0	1/1&7/1	..	100	73
Sydenham Hospital [1]	Baltimore	H. L. Hodes	1,263	85	.....	$40	1	1	0	7/1	1	67	39
Boston City Hospital [a1]	Boston	E. H. Place	1,378	89	.....	$125	2	0	0	Varies	1+	11	1
Belmont Hospital [1]	Worcester, Mass.	F. H. Knowlton	576	..	.....	$133	1	0	0	Varies	1-3	15	6
Herman Kiefer Hospital	Detroit	D. C. Young	3,461	98	.....	$150	5	0	0	7/1	1-3	87	44
Kansas City General Hospital *	Kansas City, Mo.	C. R. Ferris	490	100	.....	$80	1	1	0	7/1	1	23	18
City Isolation Hospital	St. Louis	G. S. Bozalis	1,464	98	.....	$75	1	1	0	7/1	1	80	50
Essex County Hospital for Contagious Diseases	Belleville, N. J.	W. H. Areson	2,896	90	.....	$50	2	0	0	1/1&7/1	1	49	27
Kingston Avenue Hospital	Brooklyn	M. B. Gordon	2,396	100	.....	$100	6	0	0	1/1&7/1	1-2	60	38
Queens General Hospital [a1]	Jamaica, N. Y.	H. A. Reisman	553	100	.....	$100	2	0	0	7/1	1	20	16
Willard Parker Hospital [1]	New York City	B. W. Hamilton	4,034	97	.....	$160	7	0	0	1/1&7/1	1	53	31
City Hospital *	Cleveland	H. J. Gerstenberger	2,119	92	.....	$42	1	1	0	7/1	1	90	47
Philadelphia Hospital for Contagious Diseases	Philadelphia	P. F. Luecheslı	2,216	60	.....	$166	1	2	0	Varies	1+	45	21

4. DERMATOLOGY AND SYPHILOLOGY

The following services are approved by the Council and the American Board of Dermatology and Syphilology:

Research and Educational Hospital *	Chicago	F. E. Senear	37	100	14,736	$50	1	0	0	9/1	3	2	2
Massachusetts General Hospital*	Boston	C. G. Lane	360	48	54,945	None	1	1	1	7/1	1-3	12	7
University Hospitals*	Ann Arbor, Mich.	U. J. Wile	1,324	74	13,182	$25	2	2	1	7/1	4	7	4
Minneapolis General Hospital*	Minneapolis	S. E. Sweitzer	308	86	25,174	$25	0	0	3	7/1	3	1	1
University Hospitals*	Minneapolis	H. E. Michelson	361	75	9,051	$50	0	0	2	7/1	2-3	2	2
Mayo Foundation	Rochester, Minn.	(See page 784)											
Bellevue Hospital*	New York City	F. C. Combes	1,011	100	59,171	$15	1	2	0	1/1&7/1	1-3	19	1
Columbia-Presbyterian Medical Center *	New York City	J. G. Hopkins	31	31	50,378	$150	0	0	1	Varies	1-3	...	2
New York Post-Graduate Medical School and Hospital *	New York City	G. M. MacKee	36	16	114,813	None	1	2	5	1/1&7/1	2-3	...	...
Duke Hospital *	Durham, N. C.	J. L. Callaway	175	63	9,500	None	1	0	1	7/1	1-3	3	3
Cincinnati General Hospital *	Cincinnati	E. B. Tauber	66	87	27,300	$25	1	2	0	7/1	3-4	8	6
City Hospital *	Cleveland	H. N. Cole	45	92	30,793	$42	1	1	0	7/1	1-4	12	9
University Hospitals *	Cleveland	H. N. Cole	129	28	32,506	$25	1	1	0	7/1	2-3	2	2
Graduate Hospital of the University of Pennsylvania *	Philadelphia	F. D. Weldman	50	61	24,813	None	0	0	1	6/1	3	...	...

The following services, approved by the Council, are now being reviewed in collaboration with the American Board of Dermatology and Syphilology:

Los Angeles County Hospital [a1]	Los Angeles	K. Frost	528	100	45,136	$10	2	0	0	7/1	3	18	8
University of California Hospital [a1]	San Francisco	W. J. Kerr	14	58	9,046	$25	0	2	0	7/1	1+	...	...
Georgetown University Hospital *	Washington, D. C.	F. Eichenlaub	62	26	9,952	$75	0	0	1	7/1	2	2	...
University of Chicago Clinics *	Chicago	S. W. Becker	.....	36	14,287	None	1	1	2	1/1&7/1	1-3	...	...
University Hospitals [a1]	Iowa City	R. Nomland	284	87	2,438	$21	1	1	0	7/1	1-6	4	3
Boston City Hospital [a1]	Boston	P. Boardman	176	89	44,570	$100	1	0	0	Varies	1+	8	3
Barnard Free Skin and Cancer Hospital	St. Louis	M. F. Engman	54	100	11,380	$25	1	0	0	7/1	1	2	1
Kings County Hospital *	Brooklyn	A. Potter	758	100	25,101	$100	1	0	0	10/1	1	19	3
Edward J. Meyer Memorial Hospital (Buffalo City Hospital)*	Buffalo	E. Osborne	498	85	34,854	$59	0	2	1	7/1	3-4	5	2
Metropolitan Hospital [a1]	New York City	F. M. Dearborn	136	..	20,436	$15	1	0	0	7/1	1+	4	0
Montefiore Hosp. for Chronic Diseases [a1]	New York City	F. Wise	24	87	.....	$25	1	0	0	7/1	1	1	0
New York City Hospital *	New York City	J. J. Eller	924	100	23,717	$100	1	0	0	7/1	1	21	3
Skin and Cancer Hospital	Philadelphia	A. Strickler	177	73	52,118	$30	1	0	0	12/1	1-2	11	4
Pittsburgh Skin and Cancer Foundation [1]	Pittsburgh	L. Hollander	.....	95	38,000	$150	2	0	0	7/1	2	...	...
University of Virginia Hospital *	Charlottesville	D. C. Smith	158	27	10,203	$50	1	1	1	7/1	1	3	1

5. EPILEPSY

Monson State Hospital	Palmer, Mass.	H. S. Tait	1,544	45	.....	$10	1	0	0	Varies	1	78	35

6. FRACTURES

Denver General Hospital [a14]	Denver	H. W. Wilcox	582	100	8,767	$50	1	0	0	7/1	1	78	59
City of Detroit Receiving Hospital *	Detroit	A. D. La Ferte	1,175	100	14,012	$83	1	1	0	7/1	2	43	14
Presbyterian Hospital*	New York City	W. Darrach	501	31	12,344	$50	1	1	0	1/1&7/1	1	3	0
Rhode Island Hospital *	Providence	M. S. Danforth	545	56	7,489	$50	1	0	0	7/1	1	36	12

7. GYNECOLOGY

Revision of list is now taking place in collaboration with the American Board of Obstetrics and Gynecology

Hospital for Children * [a2]	San Francisco	H. A. Stephenson	458	4	1,148	$25	0	1	0	7/1	1	2	1
Passavant Memorial Hospital *	Chicago	A. H. Curtis	629	14	240	None	1	0	0	1/1&7/1	1	5	3
Indiana University Medical Center [a1]	Indianapolis	C. Habein	798	60	3,021	$83	1	0	0	7/7	1	10	5
Touro Infirmary [a1]	New Orleans	H. E. Miller	1,153	35	5,218	$25	1	0	0	7/1	1	16	6
Johns Hopkins Hospital *	Baltimore	R. W. TeLinde	1,865	45	14,086	None	1	4	0	7/1&9/1	1-5	14	9
University Hospital [a1]	Baltimore	J. M. Hundley, Jr.	700	50	7,189	$25	1	1	0	7/1	1-4	4	2
Free Hospital for Women	Brookline, Mass.	F. A. Pemberton	2,539	76	15,616	$83	1	3	0	1/1	1	31	20
Jersey City Hospital *	Jersey City, N. J.	.....	732	99	2,031	$75	1	0	0	7/1	1	45	1
Albany Hospital [a1]	Albany, N. Y.	A. J. Wallingford	2,095	A	1,009	$25	1	1	0	7/1	1	20	12
Buffalo General Hospital *	Buffalo	J. E. King	1,445	9	.....	$25	0	1	0	7/1	1	26	11
Harlem Hospital [a1]	New York City	H. C. Falk	1,407	100	18,724	$15	1	1	0	1/1&7/1	1	47	4
Mount Sinai Hospital [a1,16]	New York City	.....	.....	55	.....	$50	1	1	1	1/1&7/1	1	...	...
New York Polyclinic Medical School and Hospital *	New York City	.....	841	12	4,984	None	1	0	0	7/1	2	9	2
New York Post-Graduate Medical School and Hospital *	New York City	W. T. Dannreuther	512	16	27,692	$60	1	0	0	10/1	1	7	1
Syracuse Memorial Hospital *	Syracuse, N. Y.	N. P. Sears	666	30	.....	None	1	0	0	7/1	1	6	3
University Hospitals [a1]	Cleveland	W. H. Welr	1,411	28	9,874	$25	1	3	0	7/1	2	19	9
Starling-Loving University Hospital *	Columbus, O.	F. Fletcher	428	59	5,161	$25	1	1	0	7/1	1-3	3	1
Graduate Hospital of the University of Pennsylvania *	Philadelphia	W. R. Nicholson	592	61	3,735	None	1	0	0	7/1	1	12	4
Woman's Hospital [a2]	Philadelphia	.....	377	46	1,970	$25	1	0	0	9/1	1-2	2	2
Elizabeth Steel Magee Hospital	Pittsburgh	B. Z. Cashman	1,489	40	2,617	$42	1	1	0	9/1	1-5	24	14
St. Francis Hospital *	Pittsburgh	B. Z. Cashman	832	30	1,155	$100	1	0	0	9/1	3	21	7
John Gaston Hospital *	Memphis, Tenn.	W. L. Williamson	875	95	11,138	$65	1	0	0	7/1	1	25	4

Numerical and other references will be found on page 784.

8. MALIGNANT DISEASES

		Chief of Service	Inpatients Treated *	Per Cent Free †	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths §	Autopsies
Los Angeles County Hospital *‡	Los Angeles	H. P. Jacobson	1,012	100	17,831	$10	2	0	0	7/1	3½	208	94
Albert Steiner Clinic for Cancer and Allied Diseases	Atlanta, Ga.	R. H. Fike	577	100	51,408	$75	1	1	0	7/1	1-2	38	26
Michael Reese Hospital *‖	Chicago	E. Uhlmann	99	43	1,721	...	2	0	0	1/1&7/1	3	...	...
Collis P. Huntington Memorial Hospital	Boston	C. C. Simmons	5,284	18	14,878	$125	1	0	2	9/1	1-5	12	8
New England Deaconess Hospital *	Boston		2,220	5	2,950	$83	2	0	0	1/1&7/1	1	104	50
Westfield State Sanatorium	Westfield, Mass.	C. M. Binnig	763	..	5,580	$150	3	0	0	Varies	1+	75	67
Pondville Hospital at Norfolk *	Wrentham, Mass.	E. M. Daland	1,711	47	6,803	$150	8	0	0	Varies	1	256	177
Eloise Hospital and Infirmary *	Eloise, Mich.		655	99	235	$67	1	0	0	7/1	1-2	261	118
Barnard Free Skin and Cancer Hospital	St. Louis		928	100	10,088	$25	2	0	0	7/1	1	15	4
Jersey City Hospital *	Jersey City, N. J.		609	90	3,759	None	1	1	0	7/1	1-2	96	18
Brooklyn Cancer Institute	Brooklyn	W. E. Howes	918	..	7,692	$75	6	0	0	3/1, 7/1, 11/1	1	189	48
Meadowbrook Hospital *	Hempstead, N. Y.	R. Derby	415	90	3,291	$100	1	0	0	7/1	1	97	41
Memorial Hospital for the Treatment of Cancer and Allied Diseases	New York City		3,012	..	61,024	$125	4	9	10	1/1&7/1	3	135	75
New York City Cancer Institute Hosp.	New York City	I. I. Kaplan	1,293	100	12,975	$15	4	4	0	1/1&7/1	1	499	79
Duke Hospital *	Durham, N. C.	R. R. Jones	951	63	1,6309	$42	1	0	0	7/1	1-3	67	42
American Oncologic Hospital *	Philadelphia	G. M. Dorrance	580	58	7,580	$100	2	0	1	7/1	1	42	24
Jeanes Hospital ‡	Philadelphia	R. A. Teahan	643	27	7,248	$50	2	0	0	7/1	3	79	57

9. MEDICINE

Revision of list is now taking place in collaboration with the American Board of Internal Medicine and the American College of Physicians

Hillman Hospital *	Birmingham, Ala.	J. S. McLester and H. R. Carter	2,282	100	21,143	$50	2	0	0	7/1	1	448	25
Employees' Hospital of the Tennessee Coal, Iron and Railroad Company *..	Fairfield, Ala.	G. F. Walsh	1,921	..	11,351	$150	1	0	0	7/1	1	130	39
Baptist State Hospital *	Little Rock, Ark.	J. N. Compton	1,307	23	.....	$100	1	0	0	7/1	2	88	21
General Hospital of Fresno County *....	Fresno, Calif.	R. B. Tupper and W. E. R. Schottstaedt	2,629	100	.....	$65	1	0	0	7/1	1	372	105
Cedars of Lebanon Hospital *‡	Los Angeles		1,676	29	8,794	$75	1	0	0	7/1	1	130	36
Los Angeles County Hospital *‡	Los Angeles	E. R. Ware	8,397	100	121,034	$10	18	0	0	7/1	3	1,058	606
White Memorial Hospital *	Los Angeles	W. E. Macpherson	1,194	3	20,761	$80	1	0	0	7/1	1-3	87	41
Alameda County Hospital *‡	Oakland, Calif.	R. T. Sutherland and H. G. MacLean	2,517	92	.....	$40	1	2	0	7/1	1-3	440	233
Collis P. and Howard Huntington Memorial Hospital *	Pasadena, Calif.	W. R. Heard	1,478	6	120	$100	1	0	0	7/1	1	140	60
San Diego County General Hospital *...	San Diego, Calif.	J. Schlappi	5,758	100	3,276	$80	2	0	0	7/1	1	449	158
Hospital for Children *	San Francisco	D. Atkinson	470	4	6,018	$25	0	1	0	7/1	1	24	10
Mount Zion Hospital *	San Francisco	L. H. Briggs	1,091	18	12,887	$50	1	0	0	6/15	1	119	71
St. Luke's Hospital *	San Francisco	H. P. Hill	1,580	20	.....	$75	1	0	0	7/1	1	108	44
San Francisco Hospital *‡	San Francisco	L. H. Briggs and G. D. Barnett	2,716	100	.....	$50	6	0	0	7/1	1	...	...
Stanford University Hospitals *‡	San Francisco	A. Bloomfield	1,932	2	19,237	$25	1	6	0	7/1	1-2	117	60
University of California Hospital *‡	San Francisco	W. J. Kerr	1,654	58	35,692	$25	1	5	0	8/1	1+	75	59
Santa Clara County Hospital *	San Jose, Calif.	G. Gray	2,437	100	16,352	$75	2	0	0	7/1	1	...	...
Fairmont Hospital of Alameda County‡	San Leandro, Calif.	R. T. Sutherland and H. G. MacLean	1,823	100	8,589	$85	1	1	0	7/1	1	376	161
Colorado General Hospital *‖‖	Denver	J. J. Waring	857	100	26,537	$75	1	0	0	7/1	1	110	93
Denver General Hospital *	Denver	M. Katzman	1,499	100	1,841	$50	2	0	0	7/1	1-2	325	96
Grace Hospital *	New Haven, Conn.	S. J. Goldberg	1,093	18	1,929	$90	1	0	0	7/1	3	143	51
New Haven Hospital *	New Haven, Conn.	F. G. Blake	1,556	37	19,839	*	1	4	0	1/1&7/1	1+	205	127
Central Dispensary and Emergency Hospital *	Washington, D. C.	H. M. Kaufman	1,216	22	7,423	$41	1	1	0	6/15	1-3	101	43
Freedmen's Hospital *‡	Washington, D. C.	F. D. Terry	191	85	7,888	*	1	2	0	7/1&10/1	1-2	147	39
Gallinger Municipal Hospital *	Washington, D. C.	W. M. Yarbrough	2,594	99	385	$25	2	8	0	7/1	1	388	160
Garfield Memorial Hospital *	Washington, D. C.	B. F. Weems	2,079	..	3,360	$50	1	0	0	7/1	1	117	90
Georgetown University Hospital *	Washington, D. C.	W. M. Yater	1,201	6	9,577	$42	1	0	2	7/1	1	95	36
Duval County Hospital *	Jacksonville, Fla.	L. Limbaugh	922	100	.....	$30	1	2	0	7/1	1	211	128
James M. Jackson Memorial Hospital *.	Miami, Fla.		7,344	53	.....	$150	1	0	0	7/1	1	596	158
Grady Hospital *	Atlanta, Ga.		4,867	100	6,168	$90	0	4	0	7/1	1+	546	197
St. Joseph Infirmary *	Atlanta, Ga.	J. H. Hines	1,630	10	2,032	$75	1	1	0	7/1	1-2	90	22
University Hospital *‡	Augusta, Ga.	V. P. Sydenstricker	1,722	29	5,319	$40	1	2	0	7/1	1	176	73
Emory University Hospital *‖	Emory University, Ga.	C. W. Strickler and S. R. Roberts	1,509	..	.....	$50	1	0	0	7/1	1	116	65
Cook County Hospital *‡	Chicago	C. C. Maher	19,735	100	27,978	$25	18	0	6	1/1&7/1	3	4,156	585
Mercy Hospital-Loyola University Clinics *	Chicago	H. Schmitz	1,360	26	25,464	$50	1	0	0	7/1	3	106	28
Michael Reese Hospital *	Chicago	S. Portis	4,188	43	14,232	$50	2	3	0	1/1&7/1	1	207	98
Mount Sinai Hospital *‡	Chicago	A. Arkin	1,336	35	21,352	$30	1	0	0	7/1	1	117	42
Norwegian-American Hospital *‡	Chicago	D. E. Markson	1,275	..	.....	$25	1	0	0	7/1	1	134	54
Passavant Memorial Hospital *	Chicago	C. A. Elliott and W. H. Holmes	1,571	14	2,787	None	3	0	1	1/1&7/1	1	81	57
Presbyterian Hospital *	Chicago	E. E. Irons	3,445	13	.....	$50	2	0	0	1/1	1-2	125	68
Provident Hospital *‡	Chicago	J. L. Hall	385	62	20,553	$50	1	0	1	9/1	1-3	77	21
Research and Educational Hospital *	Chicago	R. W. Keeton	580	100	26,547	$50	3	0	0	7/1&9/1	1-3	59	51
St. Luke's Hospital *	Chicago	A. R. Elliott	2,629	7	11,472	$25	3	6	0	7/1	1-3	118	60
University of Chicago Clinics *‡	Chicago	G. F. Dick	2,205	36	36,655	None	1	4	13	7/1	1-3	92	63
Wesley Memorial Hospital *	Chicago	A. A. Goldsmith	396	15	.....	$35	1	0	0	1/1	1	34	22
Evanston Hospital *	Evanston, Ill.	L. D. Snorf	3,363	16	12,807	$83	0	0	1	1/1	1-2	121	87
Indianapolis City Hospital *	Indianapolis	C. J. Clark	2,167	95	35,915	$41	2	0	3	7/1	1-3	397	242
Indiana University Medical Center *‡	Indianapolis	J. O. Ritchey	1,047	60	4,712	$33	1	3	0	7/1	1-3	88	56
University Hospitals *‡	Iowa City	F. M. Smith	2,120	87	3,028	$21	1	4	0	7/1	1-6	109	67
University of Kansas Hospitals *	Kansas City, Kan.	R. H. Major	1,387	56	14,919	$50	1	2	0	7/1	1-3	103	66
Louisville City Hospital *	Louisville, Ky.	J. W. Moore	1,728	98	34,156	$14	1	8	0	7/1	1-3	398	152
Charity Hospital *	New Orleans		10,571	100	70,459	$25	1	19	0	7/1	1-4	1,275	495
Touro Infirmary *‡	New Orleans	C. Eshelman	1,362	35	24,247	$25	2	0	0	7/1	1	112	53
Baltimore City Hospitals *	Baltimore	J. T. King	2,490	92	.....	$12	1	6	0	7/1	1	458	172
Church Home and Infirmary *	Baltimore	Z. R. Morgan	489	22	.....	$25	1	0	0	7/1	1	58	26
Hospital for Women *‡	Baltimore	W. Baetjer	315	18	1,640	$40	1	1	0	7/1	1	23	4
Johns Hopkins Hospital *	Baltimore	W. T. Longcope and H. M. Thomas, Jr.	3,919	45	156,965	None	1	6	0	7/1&9/1	1-7	242	171
Maryland General Hospital *	Baltimore	E. B. Freeman	663	33	1,173	$25	2	0	0	7/1	1-4	90	16
Mercy Hospital *	Baltimore	M. C. Pincoffs	960	35	3,263	$25	1	3	0	7/1	2	113	46
Provident Hospital and Free Dispensary *	Baltimore	T. P. Sprunt	298	72	329	$25	1	1	0	10/15	1-2	81	12

Numerical and other references will be found on page 784.

9. MEDICINE—(Continued)

		Chief of Service	Inpatients Treated [a]	Per Cent Free [a]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [a]	Autopsies
St. Agnes' Hospital *	Baltimore	J. T. O'Mara	906	31	3,241	None	1	0	0	7/1	1	114	15
St. Joseph's Hospital *	Baltimore	C. Smink	893	40	3,792	$10	1	2	0	7/1	3-4	182	45
Sinai Hospital *	Baltimore	C. R. Austrian	1,273	34	12,220	$50	1	2	0	7/1	1	147	52
South Baltimore General Hospital *	Baltimore	G. McLean	342	41	650	$25	1	1	0	7/1	1-2	51	17
Union Memorial Hospital * [a]	Baltimore	W. Baetjer	1,351	15	4,424	$40	1	4	0	7/1	1-4	116	42
University Hospital *	Baltimore	M. C. Pincoffs	1,397	50	18,223	$25	1	3	1	7/1	1-4	151	85
West Baltimore General Hospital *	Baltimore	L. A. M. Krause	646	30	1,649	$20	2	0	0	7/1	2	90	23
Beth Israel Hospital *	Boston	H. Linenthal	1,787	21	837	$70	1	0	0	7/1	1-2	120	55
Boston City Hospital *[1]	Boston	G. R. Minot	11,311	89	152,701	None	6	8	10	Varies	1+	1,666	509
Joseph H. Pratt Diagnostic Hospital	Boston	J. H. Pratt	1,735	12	.....	$42	2	2	0	7/1&9/1	1-2	17	8
Lahey Clinic	Boston	L. M. Hurxthal and F. N. Allan	3,000	..	10,000	$100	0	0	10	1/1&7/1	1-2	75	40
Massachusetts General Hospital *[1]	Boston	J. H. Means	4,043	48	72,991	$42	1	5	0	9/1	1-3	176	93
Massachusetts Memorial Hospitals, Robert Dawson Evans Department of Clinical Research and Preventive Medicine	Boston	C. S. Keefer	985	31	1,505	$91	1	3	0	8/1	3	72	45
Peter Bent Brigham Hospital *	Boston	S. Weiss	2,229	94	21,016	$41	1	6	0	Varies	1+	239	155
Worcester City Hospital *	Worcester, Mass.	R. W. Schofield	4,936	63	.....	$75	1	0	0	7/1	1-2	383	159
University Hospital *[1]	Ann Arbor, Mich.	C. C. Sturgis	5,278	74	78,805	$25	7	8	0	7/1	1-3	194	138
Alexander Blain Hospital	Detroit	R. L. Fisher	324	..	.....	$75	1	0	0	7/1	1-2	25	9
City of Detroit Receiving Hospital *[10]	Detroit	G. B. Myers	3,831	100	13,090	$50	1	6	1	7/1	1-3	674	368
Grace Hospital *	Detroit	G. B. Hoops	2,785	31	11,005	$50	1	1	0	7/1	2	402	121
Harper Hospital *	Detroit	H. Freund	2,454	12	24,673	$45	1	6	0	7/1	3	192	45
Henry Ford Hospital *	Detroit	R. H. Durham	1,189	28	10,940	$130	8	13	0	9/1	1-5	34	16
Providence Hospital *	Detroit	.....	1,865	10	.....	$100	1	0	0	7/1	1	285	89
Woman's Hospital [1]	Detroit	B. I. Johnstone	485	9	701	$100	1	1	0	7/1	1-2	48	18
Eloise Hospital and Infirmary *	Eloise, Mich.	M. R. McQuigren	2,091	99	5,215	$50	1	4	0	7/1	1-4	386	143
Hurley Hospital *	Flint, Mich.	M. S. Chambers	1,610	25	.....	$42	1	0	0	7/1	1	237	79
Minneapolis General Hospital *[1]	Minneapolis	G. Fahr	2,635	86	11,763	$25	0	0	5	1/1&7/1	3	386	167
University Hospitals *[1]	Minneapolis	C. J. Watson	1,134	75	36,356	$50	1	0	4	1/1&7/1	3	131	91
Mayo Foundation	Rochester, Minn.	(See page 784)											
Ancker Hospital *	St. Paul	A. R. Hall and A. Hoff	1,755	98	30,483	$50	6	0	0	7/1	1	280	203
St. Louis County Hospital *	Clayton, Mo.	H. S. Ligett	1,698	98	20,450	$50	1	1	0	7/1	1-2	187	80
Kansas City General Hospital *	Kansas City, Mo.	A. B. Jones	2,026	100	17,082	$50	2	0	0	7/1	1-2	350	257
Barnes Hospital *	St. Louis	D. P. Barr	3,879	9	26,578	$25	1	3	0	7/1	1-3	127	77
De Paul Hospital *	St. Louis	E. P. Buddy	1,437	24	1,158	$50	1	1	0	7/1	1-2	184	52
Homer G. Phillips Hospital *	St. Louis	L. Gottlieb	1,070	100	31,192	$75	1	2	0	7/1	1-3	471	123
Jewish Hospital *	St. Louis	L. Sale	2,396	24	9,889	$35	1	2	0	7/1	1-5	192	34
St. Louis City Hospital *	St. Louis	D. Sexton	4,007	100	16,945	$50	3	6	0	7/1	1-2	697	323
St. Luke's Hospital *	St. Louis	W. Baumgarten	885	19	7,334	$50	0	1	0	7/1	1	78	37
St. Mary's Group of Hospitals *	St. Louis	R. A. Kinsella	2,559	39	47,537	$25	0	0	5	7/1	3	217	112
Creighton Memorial St. Joseph's Hosp. *	Omaha	A. Sachs	2,711	10	9,498	$50	1	0	0	7/1	1+	197	68
Jersey City Hospital *	Jersey City, N. J.	.....	4,614	90	34,027	$75	1	1	0	7/1	1-2	779	95
Albany Hospital *[1]	Albany, N. Y.	L. W. Gorham	1,471	3	6,190	$25	1	2	0	7/1	1	101	68
Coney Island Hospital *	Brooklyn	P. I. Nash	1,594	100	31,674	$100	1	0	0	7/1	1	305	69
Cumberland Hospital *	Brooklyn	H. Joachim	1,073	100	52,784	$100	1	1	0	1/1	1	144	79
Jewish Hospital *[1]	Brooklyn	S. R. Blatteis	2,000	31	22,189	$25	1	1	0	1/1&7/1	1	219	74
Kings County Hospital *	Brooklyn	J. Crawford and H. M. Moses	16,639	100	61,233	$15	4	4	0	1/1&7/1	1-2	3,014	489
Long Island College Hospital *[1]	Brooklyn	T. Howard	1,468	44	19,933	$22	1	2	1	7/1	3-4	154	59
Norwegian Lutheran Deaconesses' Home and Hospital *[1]	Brooklyn	B. A. Fedde and H. Glissel	615	1	374	None	1	0	0	7/1	2	88	38
Buffalo General Hospital *	Buffalo	A. H. Aaron	2,483	9	.....	$25	1	6	0	7/1	1	311	129
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *	Buffalo	D. K. Miller	2,435	85	28,900	$50	1	1	1	7/1	3-4	322	98
Millard Fillmore Hospital *	Buffalo	J. Mesmer	1,007	19	2,523	$25	1	0	0	7/1	1	106	22
Mary Imogene Bassett Hospital *	Cooperstown, N. Y.	G. M. Mackenzie	716	5	.....	$100	1	0	0	7/1	1-2	75	49
Meadowbrook Hospital *	Hempstead, N. Y.	E. C. Jessup	2,347	90	.....	$75	1	0	0	7/1	1	250	122
Queens General Hospital *[1]	Jamaica, N. Y.	A. W. Victor	2,067	100	36,005	$15	1	1	0	7/1	1	339	181
Charles S. Wilson Memorial Hospital *	Johnson City, N. Y.	E. M. Jones	1,477	1	.....	$75	1	0	0	7/1	1	134	62
Bellevue Hospital *[1]	New York City	.....	11,021	100	.....	Varies	5	0	0	1/1&7/1	1	...	...
Flower-Fifth Avenue Hospital *	New York City	L. J. Boyd	904	5	14,489	$50	1	0	0	7/1	1	89	23
Metropolitan Hospital *[1]	New York City	L. J. Boyd	4,214	..	64,375	$100	2	0	0	7/1	1+	616	120
Montefiore Hosp. for Chronic Diseases *[1]	New York City	L. Lichtwitz	568	87	.....	$25	1	3	0	1/1&7/1	1	112	81
Mount Sinai Hospital *[1,10,28]	New York City	.....	.....	55	.....	$125	1	1	1	1/1&7/1	1	...	...
New York City Hospital *	New York City	W. I. Reardon and B. F. Donaldson	2,932	100	33,269	$15	2	0	0	7/1	1	428	149
New York Hospital *	New York City	E. F. DuBois	1,515	5	4,836	$25	1	8	0	7/1	1-5	114	86
New York Infirmary for Women and Children *[2]	New York City	M. Manter	595	35	20,720	$45	1	0	0	7/1	1	22	10
New York Polyclinic Medical School and Hospital *	New York City	.....	883	12	8,139	None	1	0	0	7/1	2	63	15
New York Post-Graduate Medical School and Hospital *	New York City	W. G. Lough	1,736	16	53,413	$90	1	0	0	7/1	1	94	40
Presbyterian Hospital *[1]	New York City	W. W. Palmer	4,058	31	62,379	$42	1	3	0	7/1	1-2	213	106
Welfare Hospital for Chronic Diseases *	New York City	.....	795	100	.....	$50	7	14	0	7/1	1-2	102	41
Genesee Hospital *	Rochester, N. Y.	D. B. Jewett	1,473	..	5,197	$75	1	2	0	7/1	1	145	54
Rochester General Hospital *	Rochester, N. Y.	D. A. Haller	561	10	5,422	$50	1	1	0	7/1	1	83	74
Strong Memorial and Rochester Municipal Hospitals *[1]	Rochester, N. Y.	W. S. McCann	3,470	62	29,157	$42	3	5	0	7/1	1-4	307	201
Hospital of the Good Shepherd *	Syracuse	E. C. Reifenstein	1,329	2	.....	$83	1	1	0	7/1	1	140	66
Grasslands Hospital *	Valhalla, N. Y.	M. D. Touart	932	91	6,471	$75	1	1	0	7/1	1-2	206	143
Duke Hospital *[1]	Durham, N. C.	F. M. Hanes	4,073	63	29,117	$42	1	6	0	7/1	3-4	126	65
Watts Hospital *	Durham, N. C.	W. R. Stanford	1,349	24	4,299	$25	0	1	0	7/1	1+	81	20
City Hospital *	Winston-Salem, N. C.	.....	1,829	38	9,871	$50	2	0	0	7/1	1-2	201	56
Trinity Hospital *	Minot, N. D.	P. H. Rowe	761	10	.....	...	1	0	0	7/1	3	69	56
City Hospital *	Akron, O.	.....	1,767	33	7,440	$50	1	0	0	7/1	1	213	104
Mercy Hospital *	Canton, O.	J. D. O'Brien	1,740	19	.....	$65	1	0	0	7/1	1	185	53
Christ Hospital *	Cincinnati	J. L. Tuechter	1,525	13	2,908	$75	2	0	0	6/25	1	152	39
Cincinnati General Hospital *[1]	Cincinnati	M. A. Blankenhorn	2,597	87	17,121	*	13	1	9	7/1	1-3	553	287
Deaconess Hospital *	Cincinnati	F. C. Theiss	2,361	6	.....	$75	1	0	0	7/1	1	161	22
Good Samaritan Hospital *	Cincinnati	W. F. Freyhof	3,930	5	.....	$35	2	0	0	7/1	1	233	57

Numerical and other references will be found on page 784.

9. MEDICINE—(Continued)

		Chief of Service	Inpatients Treated [8]	Per Cent Free [4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [5]	Autopsies
Jewish Hospital *[1,15]	Cincinnati	W. Stix	3,596	17	.....	$45	2	0	0	7/1	1-2	168	59
City Hospital *	Cleveland	R. W. Scott	2,324	92	15,997	$42	1	4	0	7/1	1	540	209
Cleveland Clinic Foundation Hospital	Cleveland	R. L. Haden	2,124	..	61,679	$56	0	0	16	7/1	1-4	48	19
Mount Sinai Hospital *[1]	Cleveland	S. S. Berger	2,022	13	21,738	$60	1	0	0	7/1	1	170	41
St. Alexis Hospital *	Cleveland	H. V. Paryzek	1,588	35	12,497	$60	1	0	0	7/1	1	198	70
St. John's Hospital *	Cleveland	R. K. Updegraff	1,465	17	.....	$50	1	0	0	7/1	1-2	140	41
St. Luke's Hospital *	Cleveland	C. T. Way	5,008	17	35,202	$25	1	2	0	6/25	2	195	59
St. Vincent Charity Hospital *	Cleveland	F. C. Oldenburg	1,852	32	13,542	$50	1	0	0	7/1	1	217	82
University Hospitals *[1]	Cleveland	J. T. Wearn	3,628	28	32,081	$25	1	8	7	7/1	2	282	176
Starling-Loving University Hospital *[15]	Columbus, O.	C. A. Doan	1,441	59	22,426	$25	1	2	0	7/1	1-4	151	83
Miami Valley Hospital *	Dayton, O.	W. B. Bryant	2,437	28		$75	1	0	0	7/1	1	...	...
Huron Road Hospital *[1]	East Cleveland, O.	A. B. Schneider	1,182	9	4,765	$50	1	0	0	7/1	1-2	99	39
Lucas County General Hospital *	Toledo, O.	C. S. Mundy	1,730	100	40,242	$50	1	0	0	7/1	1	253	72
St. Elizabeth's Hospital *	Youngstown, O.	A. M. Rosenblum	2,011	8	.....	$75	1	0	0	7/1	1	227	52
Youngstown Hospital *	Youngstown, O.	W. H. Bunn	2,087	20	1,103	$50	1	0	0	7/1	1	211	39
St. Anthony Hospital *	Oklahoma City	P. M. McNeill	1,907	8	.....	$50	1	0	0	7/1	1	167	28
State University and Crippled Children's Hospitals *	Oklahoma City	G. LaMotte	957	95	18,880	$50	1	0	0	7/1	1	95	49
University of Oregon Medical School Hospitals and Clinics *[1]	Portland, Ore.	L. Selling	1,617	100	43,879	$30	1	2	0	7/1	3	362	199
Abington Memorial Hospital *	Abington, Pa.	G. M. Piersol	1,294	13	1,762	$25	1	0	0	7/1	1+	140	56
George F. Geisinger Memorial Hosp.*[15]	Danville, Pa.	W. J. Stainsby	1,536	41	4,313	$50	1	0	0	9/1	1	126	62
Germantown Dispensary and Hospital *	Philadelphia		1,387	24	36,936	$110	1	0	0	7/1	1-2	113	46
Graduate Hospital of the University of Pennsylvania *	Philadelphia	G. M. Piersol	1,149	61	27,014	None	1	0	0	7/1	1	105	46
Hahnemann Hospital *	Philadelphia	G. H. Wells	1,411	52	13,681	$50	1	0	0	9/1	2	232	90
Hospital of the University of Pennsylvania *[1]	Philadelphia	O. H. P. Pepper	1,872	27	23,806	None	1	0	9[m]	9/1	1	107	77
Jefferson Medical College Hospital *	Philadelphia	H. A. Reimann	2,573	77	20,649	$50	1	0	0	9/1	1-3	246	114
Jewish Hospital *[1]	Philadelphia		1,521	27	5,793	None	1	0	0	6/15	1	188	101
Pennsylvania Hospital *	Philadelphia	G. G. Duncan and D. L. Farley	1,471	26	10,099	$20	0	0	2	7/1&9/1	1-3	184	101
Temple University Hospital *	Philadelphia	C. L. Brown	994	43	20,626	$40	3	0	0	7/1	3	72	34
Woman's Hospital *[1]	Philadelphia		415	66	2,380	$25	1	0	0	9/1	1	30	9
Allegheny General Hospital *	Pittsburgh	E. W. Willetts	1,478	51	27,986	$85	1	0	0	9/1	1	241	79
Elizabeth Steel Magee Hospital	Pittsburgh	J. D. Heard	1,158	40	810	$83	1	1	0	9/1	1-2	74	32
Mercy Hospital *	Pittsburgh	W. W. G. Maclachlan	1,940	30	1,292	$100	1	0	2	9/1	1+	157	49
St. Francis Hospital *	Pittsburgh	T. G. Simonton	1,429	30	2,281	$65	2	0	0	9/1	3	207	87
Reading Hospital *[15]	Reading, Pa.	W. S. Bertolet	745	49	1,361	$83	1	0	0	7/1	1	166	100
Robert Packer Hospital *	Sayre, Pa.	S. D. Conklin	2,040	55	4,038	$50	1	0	0	9/1	1	112	61
Roper Hospital *	Charleston, S. C.	R. Wilson	1,806	74	27,687	$40	0	1	0	7/1	1	204	69
John Gaston Hospital *	Memphis, Tenn.	C. H. Sanford	2,764	95	21,553	$32	1	1	0	7/1	1	85	85
George W. Hubbard Hospital of Meharry Medical College *	Nashville, Tenn.	E. L. Turner	595	60	4,757	$75	1	0	0	7/1	2	87	34
Nashville General Hospital *	Nashville, Tenn.	O. N. Bryan	1,432	90	16,312	$25	1	2	0	7/1	1-2	202	88
Vanderbilt University Hospital *	Nashville, Tenn.	H. J. Morgan	1,955	..	46,283	$35	1	4	5	7/1	1	118	73
Baylor University Hospital *	Dallas, Tex.	H. M. Winans	2,701	15	5,176	$50	1	1	0	7/1	1	153	45
Parkland Hospital *[1]	Dallas, Tex.	W. G. Reddick	2,019	95	27,542	$10	4	0	0	1/1&7/1	1	288	98
John Sealy Hospital *	Galveston, Tex.	C. T. Stone	1,109	73	13,680	$50	1	1	0	7/1	1	136	85
Jefferson Davis Hospital *[1]	Houston, Tex.	G. M. Brandlau	2,148	100	28,222	$50	1	0	0	7/1	1-2	489	153
Mary Fletcher Hospital *	Burlington, Vt.	C. H. Beecher	805	25	...	$150	1	0	0	7/1	1	69	34
University of Virginia Hospital *	Charlottesville	E. M. Landis	2,111	27	6,778	$50	1	2	0	7/1	1	119	54
Norfolk General Hospital *	Norfolk, Va.		2,328	28	3,087	$50	1	0	0	7/1	1-2	154	51
Medical College of Virginia, Hospital Division *[1]	Richmond	W. B. Porter	1,876	5	9,436	$25	1	3	0	7/1	1	307	92
King County Hospital *[1,15]	Seattle	C. E. Watts	1,975	100	52,259	$125	1	0	0	7/1	1-2	450	186
State of Wisconsin General Hospital *[1]	Madison	W. S. Middleton	2,680	84	18,511	$25	3	8	0	7/1	3	128	83
Columbia Hospital *	Milwaukee	J. J. Pink	746	1	.....	$25	1	0	0	7/1	2	60	34
St. Joseph's Hospital *[1]	Milwaukee	R. E. Fitzgerald	1,881	22	.....	$40	1	0	0	7/1	1	235	23
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	F. D. Murphy	5,495	98	54,701	$50	4	6	0	7/1	1-3	658	240
Queen's Hospital *	Honolulu, T. H.	N. P. Larsen	3,182	..	..	$90	1	0	0	1/1	1	...	...

10. MENTAL DEFICIENCIES

Lapeer State Home and Training School	Lapeer, Mich.	K. W. A. McLeod	3,850	100	.....	$165	4	0	0	Varies	1	73	26

11. MIXED [31]

St. Vincent's Hospital	Birmingham, Ala.	U. J. W. Peters	4,143	6	.....	$75	4	0	0	7/1	1	119	26
St. Margaret's Hospital	Montgomery, Ala.		4,822	7	1,541	$75	2	0	0	Varies	1	198	29
St. Mary's Hospital and Sanatorium	Tucson, Ariz.	W. P. Holbrook	3,599	6	.....	$75	3	0	0	Varies	1	130	48
Leo N. Levi Memorial Hospital	Hot Springs National Park, Ark.	D. C. Lee	1,313	100	22,674	$50	2	0	0	7/1	1	34	15
Paradise Valley Sanitarium and Hosp.	National City, Calif.	C. E. Nelson	1,582	..	11,142	$100	2	0	0	7/1	1-3	50	21
St. Joseph's Hospital [1]	San Francisco	R. H. Parkinson	8,095	10	.....	$50	1	4	0	7/1	1	297	57
St. Mary Hospital	Pueblo, Colo.	J. F. Snedec	2,548	25	881[b]	$17	1	0	0	7/1	1	145	36
Riverside Hospital	Jacksonville, Fla.	T. Z. Cason	1,123	10	8,104	$50	1	0	0	7/1	1	25	9
Lafayette Home Hospital	Lafayette, Ind.	A. B. Coyner	2,889	..	.....	$85	2	0	0	7/1	1	119	25
St. Elizabeth Hospital	Lafayette, Ind.	R. D. Bayley	4,718	15	533[b]	$60	5	0	0	7/1	1	234	43
St. Luke's Methodist Hospital	Cedar Rapids, Ia.	C. T. Hauser	4,069	21	.....	$125	2	0	0	7/1	1	159	53
Bethany Hospital	Kansas City, Kan.	D. N. Medearis	2,924	10	656	$40	2	0	0	7/1	1	156	66
Flint-Goodridge Hospital of Dillard University [1]	New Orleans		1,387	39	27,910	$50	4	0	0	7/1	1	44	16
Long Island Hospital	Boston	J. R. Cunningham	1,294	99	.....	$100	1	10	0	7/1	1+	242	113
Framingham Union Hospital	Framingham, Mass.	J. C. Merriam	3,160	33	.....	$42	2	0	0	6/1&7/1	1	112	39
Malden Hospital	Malden, Mass.		5,832	1	.....	$50	2	1	0	7/1	1	224	87
St. Joseph's Mercy Hospital	Ann Arbor, Mich.	G. F. Muehlig	3,302	5	28,337	...	2	0	0	7/1	1	109	65
Charles Godwin Jennings Hospital	Detroit	A. F. Jennings	1,331	..	.....	$83	2	0	0	7/1	1	29	7
Parkside Hospital	Detroit	D. W. McLean	1,021	..	255	$25	3	0	0	7/1	1	57	17
Mercy Hospital	Muskegon, Mich.	G. L. Le Fevre	3,547	2	.....	.....	2	0	0	7/1	1	160	19
St. Joseph Mercy Hospital	Pontiac, Mich.	F. Fitzpatrick	3,974	..	7,347	$100	5	0	0	7/1	1	116	63
Eitel Hospital	Minneapolis	A. C. Strachauer	5,243	5	.....	$100	2	0	0	7/1	1-2	96	34
Lutheran Deaconess Home and Hospital	Minneapolis	E. C. Andreassen	4,499	2	.....	$100	1	0	0	8/1	1	159	31
Northern Pacific Beneficial Association Hospital	St. Paul	A. W. Ide	2,647	..	15,156	$50	2	0	0	Varies	1	91	33

Numerical and other references will be found on page 784.

11. MIXED [31]—(Continued)

		Chief of Service	Inpatients Treated [8]	Per Cent Free [8]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [8]	Autopsies
Christian Hospital	St. Louis	G. A. Mellies	1,715	10	425	$50	2	0	0	7/1	1	72	14
Elliot Hospital	Manchester, N. H.	G. C. Wilkins	2,343	12	.....	$25	2	0	0	1/1&7/1	1	71	37
Auburn City Hospital [1]	Auburn, N. Y.	W. Sefton	4,862	10	9,392	$75	2	0	0	7/1	1	162	46
Jewish Sanitarium and Hospital for Chronic Diseases [1]	Brooklyn	A. M. Rabiner	174	40	.....	$25	1	2	0	7/1	1	131	41
St. Agnes Hospital	Raleigh, N. C.	H. A. Royster	1,524	75	3,475	....	1	0	0	7/1&9/1	1	106	27
Park View Hospital	Rocky Mount, N. C.	B. C. Willis	2,580	32	14,551	$50	1	0	0	7/1	1	140	45
Glenville Hospital	Cleveland	J. B. Price	3,791	5	5,221	$25	2	0	0	7/1	1	145	66
Grant Hospital	Columbus, O.	H. A. Baldwin	6,129	13	330[p]	$75	6	0	0	7/1	1	233	66
Mansfield General Hospital	Mansfield, O.	C. R. Damron	4,160	..	.....	$100	1	0	0	7/1	1	176	30
Morningside Hospital	Tulsa, Okla.	J. B. Gilbert	3,760	..	.....	$150	2	0	0	7/1	1	166	48
Medical Arts Hospital	Dallas, Tex.	R. E. Wright	4,370	2	.....	$100	2	0	0	7/1	1	57	4
St. Mary's Infirmary [1]	Galveston, Tex.	G. M. Beer	3,481	19	4,326	....	3	0	0	7/1	1	164	62
Methodist Hospital	Houston, Tex.	J. C. Dickson	3,586	2	1,241	$50	4	0	0	7/1	1	116	30
Wichita Falls Clinic Hospital	Wichita Falls, Tex.	Q. B. Lee	3,060	25	.....	$50	3	0	0	7/1	1	51	15
Chesapeake and Ohio Railway Hospital	Clifton Forge, Va.	J. M. Emmett	3,268	55	5,862	$50	3	0	0	1/1&7/1	2	105	30
Elizabeth Buxton Hospital	Newport News, Va.	R. von L. Buxton	3,203	10	11,784	$75	2	0	0	7/1	1-2	83	35
Grace Hospital	Richmond, Va.	.....	3,430	..	.....	$25	3	0	0	7/1	1	...	...
St. Elizabeth's Hospital	Richmond, Va.	J. S. Horsley	1,430	..	3,988	$100	1	0	0	7/1	1	40	34
St. Luke's Hospital [1]	Richmond, Va.	S. McGuire	2,306	..	9,826	$75	3	0	0	7/1	1	57	5
McMillan Hospital	Charleston, W. Va.	H. L. Robertson	2,455	..	2,200	$50	2	0	0	7/1	1-2	54	17
St. Francis Hospital	Charleston, W. Va.	R. Kessel	3,036	..	1,500	$50	4	0	0	7/1	1-2	85	17
Mercy Hospital	Janesville, Wis.	R. W. Farnsworth	2,294	..	.....	$35	3	0	0	7/1	1	146	39

12. NEUROLOGY

Revision of list is now taking place in collaboration with the American Board of Psychiatry and Neurology

Los Angeles County Hospital *[1]	Los Angeles	S. Ingham	1,244	100	4,493	$10	1	0	0	7/1	2	406	155
Gallinger Municipal Hospital *[9]	Washington, D. C.	J. W. Watts and W. Freeman	122	99	.....	$25	0	1	0	7/1	1	7	6
University of Chicago Clinics *[9]	Chicago	P. C. Buey	....	36	2,935	$20	2	1	2	7/1	3	22	19
University Hospitals *[1]	Iowa City	C. Van Epps	769	87	1,161	$21	1	1	0	7/1	1-6	25	11
Boston City Hospital *[1]	Boston	H. H. Merritt	483	89	6,485	None	1	1	9	Varies	1+	16	8
Massachusetts General Hospital *	Boston	J. B. Ayer	457	48	14,293	$42	1	1	0	2/1&8/1	1	18	9
University Hospital *	Ann Arbor, Mich.	C. Camp	660	74	7,236	$25	1	1	0	7/1	1-4	32	20
Henry Ford Hospital *	Detroit	G. O. Grain	218	28	1,975	$130[c]	1	0	0	9/1	3	8	2
Mayo Foundation	Rochester, Minn.	(See page 784)											
Kings County Hospital *	Brooklyn	O. C. Perkins	3,451	100	3,139	$15	2	2	0	7/1	2	664	103
Bellevue Hospital *[1]	New York City	F. Kennedy	2,842	100	5,720	$18	2	2	0	1/1&7/1	1	...	...
Lenox Hill Hospital *	New York City	T. K. Davis	240	35	1,309	$25	1	0	0	7/1	1	7	5
Metropolitan Hospital *[1]	New York City	S. P. Jewett	249	..	1,502	$75	1	0	0	7/1	1+	54	3
Montefiore Hosp. for Chronic Diseases *[1]	New York City	S. P. Goodhart	275	87	.....	$25	1	4	0	1/1&7/1	1½	26	21
Mount Sinai Hospital *[1,10]	New York City	.....	.....	55	.....	$50	1	2	2	1/1&7/1	1½	...	...
Neurological Institute of New York	New York City	T. J. Putnam	3,208	12	25,415	$40	1	13	0	Quart.	1-3	127	69
New York City Hospital *	New York City	J. H. Nolan	594	100	1,320	$100	1	0	0	7/1	1	151	51
Welfare Hospital for Chronic Diseases	New York City	M. Neustaedter	196	100	.....	$100	2	0	0	Varies	1	64	19
Duke Hospital *	Durham, N. C.	R. W. Graves	426	63	582	$42	1	0	0	7/1	1-2	34	22
Jefferson Medical College Hospital *	Philadelphia	B. J. Alpers	654	77	4,177	None	1	0	0	Varies	1-3	19	8
Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases	Philadelphia	F. W. Sinkler and F. H. Leavitt	222	74	3,220	$40	1	0	0	7/1	1	4	0
Temple University Hospital *[9]	Philadelphia	T. Fay	592	43	4,233	$40	3	0	0	7/1	3	60	44

13. NEUROSURGERY

Los Angeles County Hospital *[1]	Los Angeles	C. W. Rand	1,635	100	490	$10	2	0	0	7/1	3	196	4
University of California Hospital *[1]	San Francisco	H. C. Naffziger	464	58	.....	....	0	1	0	7/1	1	24	18
Presbyterian Hospital *	Chicago	A. Verbrugghen	98	13	.....	None	1	0	0	1/1	1-2	10	7
Research and Educational Hospital *[1]	Chicago	E. Oldberg	316	100	.....	$50	1	0	0	7/1&9/1	1+	23	18
Johns Hopkins Hospital *	Baltimore	W. L. Dandy	64[o]	45	.....	None	0	1	0	7/1&9/1	1-2	52	34
Boston City Hospital *[1]	Boston	D. Munro	352	89	.....	None	1	1	0	Varies	1+	73	16
Lahey Clinic	Boston	G. Horrax	600	..	.....	$100[c]	0	0	4	1/1,7/1&9/1	1-2	25	18
Massachusetts General Hospital *	Boston	W. P. Dixter	329	48	.....	$42	1	0	0	1/1&7/1	1	35	19
Henry Ford Hospital *	Detroit	A. S. Crawford	253	28	729	$130[c]	1	0	0	9/1	2-3	14	12
Mayo Foundation	Rochester, Minn.	(See page 784)											
Barnes Hospital *	St. Louis	E. Sachs	321	9	.....	$75	0	0	2	7/1	1-3	...	...
Albany Hospital *[1]	Albany, N. Y.	E. H. Campbell	277	3	.....	$25	0	1	0	7/1	1	24	23
Jewish Hospital *[1]	Brooklyn	J. Isidoff	290	31	507	$25	1	1	1	1/1	2	37	22
Kings County Hospital *	Brooklyn	E. J. Browder	.....	100	1,849	$15	1	1	0	7/1	1-2	216	149
Neurological Institute of New York	New York City	B. P. Stookey	.....	12	.....	$40	1	2	0	Varies	3	...	...
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	W. P. Van Wagenen	312	62	204	$67	1	0	0	7/1	1-2	...	...
Cleveland Clinic Foundation Hospital	Cleveland	W. J. Gardner	533	..	2,331	$56	0	0	2	7/1	1-3	42	30
Hospital of the University of Pennsylvania *[1]	Philadelphia	F. C. Grant	414	27	173	None	1	0	0	7/1	1-3	50	36
Temple University Hospital *	Philadelphia	(See Neurology)											
Medical College of Virginia, Hospital Division *[1]	Richmond	C. C. Coleman	1,141	5	466	$25	1	1	0	7/1	1	79	24

14. OBSTETRICS

Revision of list is now taking place in collaboration with the American Board of Obstetrics and Gynecology

Hospital for Children *[2]	San Francisco	H. A. Stephenson	1,216	4	2,804	$25	0	1	0	7/1	1	2	0
Garfield Memorial Hospital *	Washington, D. C.	A. Y. P. Garnett	1,883	..	1,212	$50	1	1	0	7/1	1-2	7	3
Sibley Memorial Hospital *	Washington, D. C.	H. F. Kane	2,140	6	.....	$65	1	0	0	7/1	1	4	1
Chicago Maternity Center [1]	Chicago	B. E. Tucker	[q]	100	15,817	None	1	0	0	1/1	1	2	2
Cook County Hospital *[1]	Chicago	D. S. Hillis	7,748	100	15,446	$25	4	0	0	1/1&7/1	1	...	...
Grant Hospital *	Chicago	.....	1,002	5	.....	$50	1	0	0	7/1	1-3	1	0
Provident Hospital *[1]	Chicago	P. M. Santos	708	62	4,221	$50	1	0	0	9/1	1-3	2	2
Ravenswood Hospital *	Chicago	M. Field	875	3	.....	$75	1	0	0	7/1	1	1	0
Research and Educational Hospital *	Chicago	F. Falls	734	100	9,468	$50	3	0	0	7/1&9/1	1-3	2	2
St. Vincent's Infant and Maternity Hospital	Chicago	H. E. Schmitz	271	100	1,563	$50	1	0	0	7/1	1	...	...
Indiana University Medical Center *[1]	Indianapolis	H. F. Beckman	1,366	80	5,655	$33	1	0	0	7/1	1-2	9	3
Touro Infirmary *[1]	New Orleans	W. E. Levy	1,317	35	10,853	$25	2	0	0	7/1	1	2	1
Baltimore City Hospitals *	Baltimore	L. H. Douglass	2,53[x]	92	.....	$12	1	2	0	7/1	1	3	2
Johns Hopkins Hospital *	Baltimore	N. J. Eastman	3,590	45	15,550	None	1	4	0	7/1&9/1	1-5	7	6
Provident Hosp. and Free Dispensary *	Baltimore	L. H. Douglass	328	72	512	$25	1	0	0	10/15	1	2	2

Numerical and other references will be found on page 784.

14. OBSTETRICS—(Continued)

		Chief of Service	Inpatients Treated[a]	Per Cent Free[4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths[a]	Autopsies
Sinai Hospital *	Baltimore	M. W. Aaronson	824	34	2,757	$50	0	1	0	7/1	1	3	1
Union Memorial Hospital *	Baltimore	J. McF. Bergland	632	15	1,704	$30	1	0	0	7/1	1-2	12	6
University Hospital *[1]	Baltimore	L. H. Douglass	1,396	50	11,654	$25	1	3	0	7/1	1-4	5	1
Boston Lying-in Hospital	Boston	F. C. Irving	3,189	9	30,313	$50	1	2	0	1/1&7/1	1½	0	0
Massachusetts Memorial Hospitals *	Boston	C. W. Sewall	819	31	4,358	$95	2	0	0	7/1	2	1	0
Providence Hospital *	Detroit	.....	2,493	10	.....	$100	1	0	0	7/1	1	8	2
Cooper Hospital *	Camden, N. J.	A. B. Davis and G. B. German	1,711	40	6,975	$100	1	0	0	7/1	3	4	2
Margaret Hague Maternity Hospital [1]	Jersey City, N. J.	S. A. Cosgrove	6,387	80	46,756	$100	7	0	0	Quart.	1¾	15	4
Anthony N. Brady Maternity Home	Albany, N. Y.	G. E. Loehner	1,269	5	2,666	$100	1	0	0	7/1	1-3	1	0
Cumberland Hospital *	Brooklyn	W. C. Meagher	1,170	100	9,440	$100	1	1	0	1/1	1	5	2
Methodist Hospital *	Brooklyn	O. P. Humpstone	1,917	30	9,712	$90	1	1	0	1/1&7/1	1	7	3
Norwegian Lutheran Deaconesses' Home and Hospital *[1]	Brooklyn	J. B. Dowd and B. Harris	863	1	3,532	None	1	1	0	7/1	2	2	0
Buffalo General Hospital *	Buffalo	F. C. Goldsborough	783	9	.....	$25	0	1	0	7/1	1	4	0
Millard Fillmore Hospital *	Buffalo	M. G. Potter	1,535	19	1,191	$25	1	0	0	7/1	1	6	1
Fordham Hospital *	New York City	A. C. Butts	1,664	100	7,111	$15	1	0	0	1/1	1	6	3
French Hospital *	New York City	F. C. Holden	1,204	7	7,375	$83	1	0	0	7/1	1	4	2
Harlem Hospital *[1]	New York City	F. A. Kassebohm	3,159	100	18,982	$15	1	0	0	7/1	1	14	2
Lenox Hill Hospital *	New York City	P. H. Williams and R. L. McCready	1,162	35	4,244	$50	1	0	0	7/1	1	3	2
Morrisania City Hospital *[26]	New York City	H. Aranow	1,412	100	4,527	$15	1	1	0	1/1&7/1	1	4	2
New York Infirmary for Women and Children *[3]	New York City	W. Ragland	973	35	5,652	$45	1	0	0	7/1	1	2	1
New York Polyclinic Medical School and Hospital *	New York City	.....	907	12	2,703	None	1	0	0	7/1	2	...	...
Syracuse Memorial Hospital *	Syracuse, N. Y.	H. W. Schoeneck	1,425	30	.....	None	1	0	0	7/1	1	3	1
Watts Hospital *	Durham, N. C.	R. A. Ross	718	24	1,011	$25	1	0	0	7/1	1	1	0
Cincinnati General Hospital *[1]	Cincinnati	H. L. Woodward	2,844	87	3,310	*	1	2	0	7/1	2	4	4
City Hospital *	Cleveland	A. H. Bill	1,755	92	3,763	$42	1	2	0	7/1	1	4	...
Mount Sinai Hospital *[1]	Cleveland	M. Garber	885	13	1,702	$60	1	0	0	7/1	1	...	...
St. Ann's Maternity Hospital	Cleveland	J. R. Thompson	1,697	13	2,120	$50	2	0	0	7/1	1	3	0
St. John's Hospital *	Cleveland	C. A. O'Connell	1,118	17	.....	$50	1	0	0	7/1	1-2	4	3
St. Luke's Hospital *[26]	Cleveland	C. T. Hemmings	3,151	17	2,002	$25	1	1	0	6/25	2	12	2
University Hospital *	Cleveland	A. H. Bill	2,511	28	23,321	$25	1	4	0	7/1	2	3	1
Miami Valley Hospital *	Dayton, O.	G. Erbaugh	1,529	28	.....	$75	1	0	0	7/1	1	...	...
George F. Geisinger Memorial Hospital *	Danville, Pa.	R. E. Nicodemus	614	41	2,907	$50	1	0	0	9/1	1	2	1
Jefferson Medical College Hospital *	Philadelphia	N. W. Vaux	1,671	77	11,209	$50	2	0	0	7/1&10/1	1-3	4	2
Woman's Hospital *[2]	Philadelphia	.....	1,035	46	3,512	$25	1	0	0	9/1	1-2	0	0
Elizabeth Steel Magee Hospital	Pittsburgh	C. E. Ziegler	3,658	40	14,978	$42	1	3	0	9/1	1-5	19	9
St. Francis Hospital *	Pittsburgh	J. H. Carroll	1,318	30	1,538	$65	1	0	0	9/1	3	2	1
Baroness Erlanger Hospital *	Chattanooga, Tenn.	H. P. Hewitt	1,559	57	3,908	$75	1	0	0	7/1	1+	...	...
John Gaston Hospital *	Memphis, Tenn.	W. T. Pride	1,410	95	12,129	$65	1	0	0	7/1	1	21	3
Baylor University Hospital *	Dallas, Tex.	C. R. Hannah	1,391	15	4,886	$50	1	1	0	7/1	1	6	2
Parkland Hospital *[1]	Dallas, Tex.	W. T. Robinson	1,912	95	6,214	$10	2	0	0	1/1&7/1	1	12	3
Medical College of Virginia, Hospital Division *[1]	Richmond	H. H. Ware	1,476	5	4,588	$25	1	1	0	7/1	1	29	14

15. OBSTETRICS-GYNECOLOGY

Revision of list is now taking place in collaboration with the American Board of Obstetrics and Gynecology

Hillman Hospital *	Birmingham, Ala.	.....	3,255	100	17,275	$50	2	0	0	7/1	1	46	6
Los Angeles County Hospital *[1]	Los Angeles	E. M. Lazard	11,546	100	12,380	$10	7	0	0	4/1&10/1	3½	54	25
White Memorial Hospital *[1]	Los Angeles	R. J. Thompson	1,671	3	14,317	$80	2	0	0	7/1	1-3	8	4
Alameda County Hospital *[1]	Oakland, Calif.	E. N. Ewer and C. A. De Puy	2,175	92	.....	$40	1	1	0	7/1	1-3	17	6
San Francisco Hospital *[1]	San Francisco	W. G. Moore and A. V. Pettit	2,704	100	.....	$50	4	0	0	7/1	1	...	...
Stanford University Hospitals *[1]	San Francisco	L. Emge	1,500	2	14,262	$25	1	2	0	7/1	1-2	10	4
University of California Hospital *[1]	San Francisco	F. W. Lynch	1,396	58	12,481	$25	1	3	0	7/1	1+	8	7
Santa Clara County Hospital *	San Jose, Calif.	A. Shufelt	1,266	100	11,292	$75	1	0	0	7/1	1	...	...
New Haven Hospital *	New Haven, Conn.	A. H. Morse	1,566	37	8,429	*	2	0	0	7/1	1+	4	2
Columbia Hospital for Women and Lying-in Asylum *[1]	Washington, D. C.	.....	3,497	..	.....	None	4	2	0	1/1&7/1	1½	11	4
Freedmen's Hospital *[1]	Washington, D. C.	J. W. Ross	1,700	85	8,643	*	1	2	0	7/1&10/1	1-2	26	9
Gallinger Municipal Hospital *	Washington, D. C.	H. F. Kane	4,935	99	5,076	$25	2	2	0	7/1	1	27	26
Grady Hospital *	Atlanta, Ga.	.....	5,760	100	57,541	$40	2	4	0	7/1	1+	39	18
University Hospital *[1]	Augusta, Ga.	R. Torpin	2,185	29	5,726	$40	1	1	0	7/1	1	14	11
Chicago Lying-in Hosp. and Dispensary	Chicago	(See University of Chicago Clinics)											
Mercy Hospital-Loyola University Clinics *[1]	Chicago	H. Schmitz	1,151	26	5,568	$50	2	0	0	7/1	3	25	18
Michael Reese Hospital *[1]	Chicago	I. Stein	3,065	43	6,192	$50	2	0	0	1/1&7/1	3	17	11
Mount Sinai Hospital *[1]	Chicago	A. E. Kanter and L. Rudolph	1,480	35	3,196	$30	1	0	0	7/1	1	2	2
Presbyterian Hospital *	Chicago	N. S. Heaney	1,934	13	.....	$50	3	0	0	1/1&7/1	2¼	11	6
St. Luke's Hospital *	Chicago	H. O. Jones	1,827	7	9,238	$25	3	0	0	7/1	1-3	15	9
University of Chicago Clinics *[1,3]	Chicago	L. L. Adair	3,951	36	32,153	None	3	4	0	1/1&7/1	3	2	2
Indianapolis City Hospital *	Indianapolis	J. W. Hofmann and H. F. Beckman	2,952	95	19,079	$41	2	0	0	7/1	1	38	20
University Hospitals *[1]	Iowa City	E. D. Plass	3,085	87	3,240	$21	1	3	0	7/1	1-6	22	12
University of Kansas Hospitals *	Kansas City, Kan.	L. A. Calkins	1,016	56	7,122	$50	1	2	0	7/1	1-3	15	10
Louisville City Hospital *	Louisville, Ky.	C. W. Hibbitt	2,504	98	18,527	$14	2	3	0	7/1	1-3	20	11
Charity Hospital *	New Orleans	.....	12,891	100	40,960	$25	7	7	0	7/1	1-3	131	62
Maryland General Hospital *	Baltimore	E. H. Kloman	803	33	1,464	$25	1	0	0	7/1	1-4	10	3
Mercy Hospital *	Baltimore	A. Samuels and E. P. Smith	1,195	35	2,749	$25	1	1	0	7/1	3	16	7
St. Joseph's Hospital *	Baltimore	T. Galvin	1,359	40	2,600	$10	1	1	0	7/1	3-4	3	1
Boston City Hospital *[1]	Boston	R. M. Green	5,856	89	20,289	None	2	0	0	Varies	1+	10	5
Carney Hospital *	Boston	.....	889	6	4,198	None	1	2	0	1/1,5/1,9/1	1	10	2
University Hospital *[1]	Ann Arbor, Mich.	N. F. Miller	3,052	74	16,000	$25	2	2	0	7/1	1-4	60	37
City of Detroit Receiving Hospital *[1,11]	Detroit	W. F. Seeley	1,219	100	5,239	$83	2	*	0	7/1	1-4	27	18
Florence Crittenton Hospital	Detroit	H. A. Pearse	2,768	..	8,305	$50	1	2	0	7/1	3	9	3
Grace Hospital *[1]	Detroit	M. A. Darling	3,773	31	4,121	$50	1	2	0	9/1	3	5	1
Harper Hospital *	Detroit	G. Kamperman	2,402	12	5,582	$45	1	2	0	7/1	3	8	1
Henry Ford Hospital *	Detroit	J. P. Pratt	1,500	28	17,761	$150[c]	1	2	0	9/1	4	12	8

Numerical and other references will be found on page 784.

15. OBSTETRICS-GYNECOLOGY—(Continued)

		Chief of Service	Inpatients Treated[2]	Per Cent Free[4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths[5]	Autopsies
Herman Kiefer Hospital	Detroit	W. F. Seeley	2,335	98	.....	$125	2	0	0	7/1	1	13	6
Woman's Hospital [1]	Detroit	H. M. Nelson and L. E. Daniels	3,981	9	2,823	$75	2	7	1	7/1	1-3	22	9
Minneapolis General Hospital *[1]	Minneapolis	J. H. Simons	2,391	86	10,433	$25	0	0	2	1/1&7/1	3	17	12
University Hospitals *[1]	Minneapolis	J. L. McKelvey	1,292	75	7,591	$50	1	0	3	1/1&7/1	3	8	6
Mayo Foundation	Rochester, Minn.	(See page 784)											
Ancker Hospital *	St. Paul	L. W. Barry	1,930	98	10,866	$50	0	0	1	7/1	3	21	13
Jewish Hospital *[1]	St. Louis	S. A. Weintraub	1,200	24	1,681	$63	1	0	0	7/1	1-5	7	3
St. Louis City Hospital *	St. Louis	T. K. Brown and T. Y. Ayars	3,690	100	8,151	$50	1	4	0	7/1	1-3	31	21
St. Louis Maternity Hospital [1]	St. Louis	.....	2,220	9	.....	$25	1	1	0	7/1	1-3	4	4
St. Luke's Hospital *	St. Louis	C. D. O'Keefe	1,087	19	1,169	$50	0	1	0	7/1	1	...	...
St. Mary's Group of Hospitals *	St. Louis	W. H. Vogt	2,448	39	14,462	$25	0	0	6	7/1	3	12	6
Creighton Memorial St. Joseph's Hosp.*	Omaha	M. E. Grier	1,558	10	4,058	$50	1	0	0	7/1	1-3	8	3
University of Nebraska Hospital *	Omaha	E. C. Sage	878	100	3,952	$50	1	0	0	7/1	1	8	5
Greenpoint Hospital *[1]	Brooklyn	T. S. Welton	1,699	100	10,300	None	0	0	2	9/1	2	7	3
Jewish Hospital *[1]	Brooklyn	.....	4,269	31	7,907	$25	2	2	0	1/1&7/1	2	10	3
Kings County Hospital *	Brooklyn	R. Garlick and C. Gordon	7,629	100	26,504	$15	4	0	0	7/1	2	66	16
Long Island College Hospital *	Brooklyn	A. C. Beck	2,309	44	13,252	$22	1	2	0	7/1	3	12	4
St. Mary's Hospital *[1]	Brooklyn	.....	1,699	22	5,431	$40	1	1	0	7/1	1-2	9	3
Edward J. Meyer Memorial Hospital (Buffalo City Hospital)*	Buffalo	F. Goldsborough	1,360	85	3,900	$50	1	2	1	7/1	3-4	20	7
Queens General Hospital *[1]	Jamaica, N. Y.	H. P. Mencken	2,986	100	13,609	$15	1	1	0	7/1	1	8	6
Bellevue Hospital *[1]	New York City	W. E. Studdiford	4,356	100	.....	Varies	11	0	0	7/1	4	...	...
Flower-Fifth Avenue Hospital *	New York City	H. B. Safford	2,310	5	4,264	$50	1	0	0	7/1	1	3	0
Lincoln Hospital *	New York City	E. J. Davin	2,202	..	14,908	$15	2	3	0	1/1&7/1	1-2	9	3
Lying-in Hospital	New York City	H. J. Stander	3,875	5	2,970	$25	1	10	0	7/1	1-5	12	10
Metropolitan Hospital *[1]	New York City	H. B. Safford	1,954	..	13,849	$15	2	0	0	7/1	1+	13	1
New York City Hospital *	New York City	J. V. Ricci and R. W. Nutter	1,695	100	4,208	None	1	0	0	7/1	1	17	5
Sloane Hospital for Women [1]	New York City	B. P. Watson	4,499	31	35,699	$50	1	2	0	7/1	3	15	5
Woman's Hospital [1]	New York City	A. H. Aldridge	3,968	36	40,392	$10	11	0	0	Quart.	2-3	22	9
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	K. M. Wilson	2,534	62	13,914	$42	1	2	2	7/1	1-4	11	6
Duke Hospital *[1]	Durham, N. C.	B. Carter	1,715	63	13,753	$42	1	2	0	7/1	3-4	31	20
Mercy Hospital *	Canton, O.	L. E. Leavenworth	1,909	19	.....	$65	1	0	0	7/1	1	13	2
Huron Road Hospital *	East Cleveland, O.	G. J. Salisbury and S. C. Runnels	1,978	9	1,324	$40	1	0	0	7/1	1-3	11	8
Lucas County General Hospital *	Toledo	E. C. Mohr and M. W. Diethelm	1,072	100	2,419	$50	1	0	0	7/1	1	11	4
State University and Crippled Children's Hospitals *	Oklahoma City	G. Penick and W. W. Wells	1,131	95	9,196	$50	1	0	0	7/1	1	13	8
University of Oregon Medical School Hospitals and Clinics *	Portland	R. E. Watkins	1,656	100	12,738	$30	1	2	0	7/1	3	8	5
Hahnemann Hospital *	Philadelphia	E. B. Craig and L. B. Clemmer	1,706	52	9,856	$50	1	0	0	9/1	2	15	11
Hospital of the University of Pennsylvania *[1]	Philadelphia	C. C. Norris	2,542	27	14,070	None	3	0	0	9/1	3	...	...
Kensington Hospital for Women	Philadelphia	E. A. Schumann	1,629	46	8,113	$25	2	1	0	7/1	1-2	7	5
Pennsylvania Hospital *	Philadelphia	R. A. Kimbrough, Jr. and C. B. Lull	3,425	26	18,464	$20	0	0	3	1/1, 5/1, 9/1	1-3	15	6
Philadelphia General Hospital *[1]	Philadelphia	.....	3,389	95	12,295	$100	1	0	0	7/1	1-2	...	...
Roper Hospital *	Charleston, S. C.	R. L. McCrady and L. A. Wilson	1,398	74	14,182	$40	0	1	0	7/1	1-2	13	4
George W. Hubbard Hospital of Meharry Medical College *	Nashville, Tenn.	R. S. Duke	251	60	1,197	$75	1	0	0	7/1	1-2	11	3
Nashville General Hospital *	Nashville, Tenn.	D. C. Seward and M. S. Lewis	1,714	90	15,090	$25	1	1	0	7/1	1-2	8	4
Vanderbilt University Hospital *	Nashville, Tenn.	L. E. Burch	1,375	..	12,460	$35	1	3	5	7/1	1	14	8
John Sealy Hospital *	Galveston, Tex.	W. R. Cooke	1,222	73	6,143	$50	1	0	0	7/1	1	14	10
University of Virginia Hospital *	Charlottesville	T. J. Williams	1,212	27	4,519	$50	1	1	0	7/1	1	20	6
State of Wisconsin General Hospital *[1]	Madison	J. W. Harris	1,008	84	5,548	$25	1	2	0	7/1	3	7	5
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	H. W. Shutter	2,894	98	17,229	$50	4	2	0	7/1	1	10	6

16. OPHTHALMOLOGY

Los Angeles County Hospital *[1]	Los Angeles	W. A. Boyce and A. R. Irvine	815	100	15,057	$10	2	0	0	7/1	2	5	1
White Memorial Hospital *	Los Angeles	W. A. Boyce	156	3	7,321	$80	1	0	0	7/1	1-3	1	1
Green's Eye Hospital	San Francisco	A. S. Green	1,059	..	18,502	$50	1	0	0	7/1	1	...	...
San Francisco Hospital *	San Francisco	W. D. Horner and S. F. Boyle	660	..	.....	$50	1	0	0	7/1	1	...	...
Stanford University Hospitals *[1]	San Francisco	H. Barkan	448	2	10,818	$25	1	1	0	7/1	1-2	1	1
University of California Hospital *[1]	San Francisco	H. C. Naffziger	201	58	15,559	$25	0	2	0	7/1	1+	...	...
Colorado General Hospital *[13]	Denver	W. M. Bane	114	57	11,285	$40	2	0	0	7/1	2	...	...
Episcopal Eye, Ear and Throat Hospital	Washington, D. C.	.....	6,244	27	25,434	$7	1	4	0	3/1, 7/1, 11/1	1½	3	...
Cook County Hospital *[1]	Chicago	W. F. Moncreiff	681	100	23,233	$25	5	0	0	1/1&7/1	1-3	4	0
Illinois Eye and Ear Infirmary [1]	Chicago	H. S. Gradle	2,551	100	216,274	None	6	0	0	1/1&7/1	1	...	...
Michael Reese Hospital *	Chicago	S. J. Meyer	572	43	8,935	$50	1	0	0	1/1	1	0	0
Passavant Memorial Hospital *	Chicago	S. R. Gifford	321	14	127	None	1	0	0	1/1&7/1	1	...	...
Presbyterian Hospital *	Chicago	W. F. Moncreiff	183	13	.....	$25	1	1	0	1/1&7/1	1	1	1
Research and Educational Hospital *	Chicago	H. Beard	190	100	8,647	$50	1	0	0	7/1&9/1	1	...	...
University of Chicago Clinics *	Chicago	E. V. L. Brown	220	36	9,847	$25	1	3	3	7/1	1-3	...	...
Indianapolis City Hospital *	Indianapolis	B. J. Larkin	209	95	5,369	$41	1	0	0	7/1	1-2	2	0
Indiana University Medical Center *[1]	Indianapolis	W. F. Hughes	268	80	2,947	$33	1	0	0	7/1	1-2	1	0
University Hospital *[1]	Iowa City	C. S. O'Brien	1,105	87	6,492	$21	1	3	0	1/1&7/1	1-6	...	...
Eye, Ear, Nose and Throat Hospital	New Orleans	W. R. Buffington	410	..	18,149	None	3	3	0	7/1	2	...	...
Johns Hopkins Hospital *	Baltimore	A. C. Woods	1,168	45	21,604	None	1	4	0	7/1&9/1	1-4	5	3
Massachusetts Eye and Ear Infirmary	Boston	J. H. Waite	2,311	25	55,238	None	7	0	0	Quart.	2	9	4
University Hospital *[1]	Ann Arbor, Mich.	F. B. Fralick	1,084	74	15,273	$25	2	2	0	7/1	1-3	2	1
Henry Ford Hospital *	Detroit	E. L. Whitney	247	28	17,129	$130	1	2	0	9/1	2	...	...

Numerical and other references will be found on page 784.

16. OPHTHALMOLOGY—(Continued)

		Chief of Service	Inpatients Treated[a]	Per Cent Free[b]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths[a]	Autopsies
University Hospitals *[1]	Minneapolis	F. E. Burch	264	75	6,983	$50	0	0	2	1/1&7/1	3	2	0
Barnes Hospital *	St. Louis	L. T. Post	511	9	29,940	$25	1	4	0	7/1	1-3	1	0
St. Louis City Hospital *	St. Louis	L. T. Post	271	100	6,002	$100	1	0	0	7/1	1	...	...
St. Mary's Group of Hospitals *	St. Louis	W. H. Luedde	177	39	9,137	$25	0	0	2	7/1	3	2	0
Brooklyn Eye and Ear Hospital	Brooklyn	.....	1,773	..	61,993	None	6	0	0	3/1, 7/1, 11/1	2	2	0
Kings County Hospital *	Brooklyn	W. Moehle	510	100	12,571	$15	1	1	0	1/1&7/1	1	6	2
Long Island College Hospital *[1]	Brooklyn	J. N. Evans	267	44	7,564	$22	1	1	2	7/1	4	...	...
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *	Buffalo	I. Koenig	126	85	7,794	$59	1	2	0	7/1	3-4	...	...
Queens General Hospital *[1]	Jamaica, N. Y.	W. G. Frey	270	100	9,160	$100	1	0	0	7/1	1	2	1
Bellevue Hospital *[1]	New York City	.....	531	100	.....	Varies	4#	0	0	1/1, 5/1, 7/1	3	...	...
Manhattan Eye, Ear and Throat Hospital	New York City	.....	1,695	16	85,006	None	7	0	0	1/1, 5/1, 9/1	2¼	2	0
Metropolitan Hospital *[1]	New York City	A. L. Chambers	155	..	5,438	$15	1	0	0	7/1	1+	...	...
Mount Sinai Hospital *[1,10]	New York City	.....	.....	55	.....	$50	1	1	0	7/1	1	...	...
New York Eye and Ear Infirmary	New York City	.....	2,900	13	82,782	None	8	0	0	Quart.	2-2¾	7	0
Presbyterian Hospital *[1]	New York City	P. Thygeson and J. Dunnington	1,900	31	27,605	$20	6	0	0	1/1&7/1	3	...	...
St. Luke's Hospital *	New York City	W. G. Frey	161	41	8,685	$25	1	0	0	1/1	1½-2	...	...
Welfare Hospital for Chronic Diseases *	New York City	J. W. Smith	250	100	3,800	$100	1	0	0	7/1	1	...	...
Strong Memorial and Rochester Municipal Hospital *	Rochester, N. Y.	J. F. Gipner	261	62	7,043	$42	1	1	0	7/1	2	...	...
Grasslands Hospital *[1]	Valhalla, N. Y.	E. C. Wood	105	91	5,956	$75	1	0	0	7/1	1-2	1	1
Cincinnati General Hospital *	Cincinnati	D. T. Vail	387	87	11,184	*	1	1	0	7/1	1-2	3	1
City Hospital *	Cleveland	P. W. Moore	187	92	4,972	$42	1	0	0	7/1	1	2	0
University Hospitals *[1]	Cleveland	A. B. Bruner	550	28	11,774	$25	1	1	0	7/1	2	2	0
University of Oregon Medical School Hospitals and Clinics *	Portland	F. A. Kiehle	146	100	15,555	$40	1	0	0	7/1	1	...	...
Graduate Hospital of the University of Pennsylvania *	Philadelphia	W. Shoemaker and L. C. Peter	333	61	5,978	None	1	0	0	7/1	1	...	...
Hospital of the University of Pennsylvania *[1]	Philadelphia	F. H. Adler	350	27	5,987	None	0	0	3	7/1	3	1	1
Temple University Hospital *	Philadelphia	W. I. Lillie	194	43	5,962	$40	3	0	0	7/1	3	1	0
Wills Hospital	Philadelphia	.....	3,524	67	187,813	None	8	0	0	Quart.	2	6	0
Jefferson Davis Hospital *[1]	Houston, Tex.	R. K. Daily	294	100	5,006	$50	1	0	0	7/1	1-2	2	0

17. OPHTHALMOLOGY-OTOLARYNGOLOGY

San Diego County General Hospital *	San Diego, Calif.	F. M. Bond and C. W. Brown	1,044	100	7,787	$80	1	0	0	7/1	1	1	...
Hospital for Children *[2]	San Francisco	G. Hosford and R. C. Martin	976	4	4,095	$25	0	1	0	7/1	1	...	...
Gallinger Municipal Hospital *	Washington, D. C.	W. T. Davis and D. Davis	1,389	99	2,203	$25	1	1	0	7/1	1	2	0
Grady Hospital *	Atlanta, Ga.	.....	2,072	100	29,700	$20	2	4	0	7/1	1+	17	6
Provident Hospital *	Chicago	C. L. Forney	409	62	9,755	$50	1	0	0	9/1	1-3	1	1
Louisville City Hospital *	Louisville, Ky.	C. Wolfe and W. Dean	1,337	98	11,752	$50	1	0	0	7/1	1-2	2	0
Charity Hospital *	New Orleans	.....	6,514	100	52,611	$25	5	5	0	7/1	1-3	36	8
Touro Infirmary *[1]	New Orleans	E. E. Allgreyer and A. J. McComiskey	1,613	35	17,372	$25	1	0	0	7/1	1	3	3
Baltimore Eye, Ear and Throat Charity Hospital	Baltimore	.....	2,973	53	21,094	None	4	0	0	7/1	1-2	...	...
University Hospital *	Baltimore	C. A. Clapp and E. A. Looper	898	50	8,330	$25	0	1	0	7/1	1	2	...
Boston City Hospital *[1]	Boston	J. J. Regan and L. M. Freedman	5,308	89	49,212	None	2	0	0	Varies	1+	42	10
City of Detroit Receiving Hospital *[10]	Detroit	P. Heath and J. M. Robb	993	100	6,149	$83	1	1	0	7/1	1-2	6	3
Grace Hospital *	Detroit	N. Bentley	1,521	31	7,004	$50	1	0	0	9/1	1-2	...	...
Harper Hospital *	Detroit	P. Heath and J. M. Robb	2,874	12	9,444	$45	1	3	0	7/1	1-3	12	5
Shurly Hospital	Detroit	B. R. Shurly and M. Wainger	751	75	14,960	$25	3	0	0	7/1	1-2	...	...
Eloise Hospital and Infirmary *	Eloise, Mich.	R. Beattie	896	99	629	$50	1	1	0	7/1	1-2	5	1
Minneapolis General Hospital *[1]	Minneapolis	M. C. Pfunder	1,472	86	12,303	$25	0	0	2	1/1	3	6	4
Mayo Foundation	Rochester, Minn.	(See page 784)											
Ancker Hospital *	St. Paul	R. O. Leavenworth	1,259	98	12,346	$50	2	0	0	7/1	2	3	3
Children's Mercy Hospital [1]	Kansas City, Mo.	.....	1,076	100	6,237	$25	1	0	0	7/1	1-2	8	7
Kansas City General Hospital *	Kansas City, Mo.	A. W. McAlester and P. Lux	634	100	9,661	$50	2	0	0	7/1	1	2	1
Jersey City Hospital *	Jersey City, N. J.	.....	2,535	90	12,152	None	2	1	0	7/1	1-2	17	1
Newark Eye and Ear Infirmary	Newark, N. J.	W. P. Eagleton	2,224	25	8,225	None	3	0	0	2/1, 6/1, 10/1	1¼	30	13
Harlem Eye and Ear Hospital [1]	New York City	C. B. Meding	1,735	77	41,054	None	3	0	0	1/1, 7/1, 9/1	2	2	0
New York Polyclinic Medical School and Hospital *	New York City	.....	2,034	12	25,181	None	4	0	0	1/1&7/1	2	7	1
New York Post-Graduate Medical School and Hospital *	New York City	J. W. White and A. Nilsen	2,045	16	31,995	None	1	5	0	5/1&11/1	3	5	1
Rochester General Hospital *	Rochester, N. Y.	L. W. Jones and C. S. Nash	430	10	8,547	$50	2	1	0	7/1	2	1	0
Duke Hospital *[1]	Durham, N. C.	W. B. Anderson and W. W. Eagle	1,115	63	8,144	$42	1	2	0	7/1	3-4	6	4
Starling-Loving University Hospital *	Columbus, O.	A. D. Frost and H. G. Beatty	583	59	6,432	$25	0	1	0	7/1	1	3	3
State University Hospital and Crippled Children's Hospitals *	Oklahoma City	L. M. Westfall and T. G. Walls	671	95	6,481	$50	1	0	0	7/1	1	8	6
Eye and Ear Hospital	Pittsburgh	W. E. Carson and J. H. McCready	4,028	16	17,225	None	4	0	0	7/1	3	31	13
Knoxville General Hospital *	Knoxville, Tenn.	J. L. Montgomery	574	70	4,074	$40	1	0	0	7/1	1	1	0
Nashville General Hospital *	Nashville, Tenn.	E. L. Roberts	594	90	7,260	$25	2	0	0	7/1	1-2	5	...
Memphis Eye, Ear, Nose and Throat Hospital	Memphis, Tenn.	E. C. Ellett	1,530	40	18,020	None	4	0	0	1/1&7/1	2	1	0

Numerical and other references will be found on page 784.

17. OPHTHALMOLOGY-OTOLARYNGOLOGY— (Continued)

		Chief of Service	Inpatients Treated[3]	Per Cent Free[4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths[5]	Autopsies
Parkland Hospital *[1]	Dallas, Tex.	G. Jones	710	95	5,122	$10	1	0	0	7/1	1-2	7	3
University of Virginia Hospital *	Charlottesville	E. P. Burton and F. D. Woodward	1,273	27	7,197	$25	1	2	0	7/1	1	13	2
Medical College of Virginia, Hospital Division*[1]	Richmond	R. H. Courtney and K. S. Blackwell	1,347	5	11,192	$25	1	1	0	7/1	1	...	...
King County Hospital *[1,13]	Seattle	A. T. Wanamaker	411	100	9,616	$75	1	0	0	7/1	1-2	1	0
State of Wisconsin General Hospital *[1]	Madison	F. A. Davis and W. M. Nesbit	1,045	84	3,698	$25	1	2	0	7/1	3	6	4
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	E. R. Ryan	2,194	98	22,887	$50	1	2	0	7/1	1-2	1	0

18. ORTHOPEDIC SURGERY

Revision of list is now taking place in collaboration with the American Board of Orthopaedic Surgery

Hillman Hospital *	Birmingham, Ala.	J. D. Sherrill	719	100	4,829	$50	1	0	0	7/1	1	39	2
Children's Hospital	Los Angeles	J. C. Wilson	395	57	4,872	$90	1	0	0	7/1	1	3	2
Los Angeles County Hospital *[1]	Los Angeles	J. C. Wilson	4,629	100	34,480	$10	4	0	0	4/1&10/1	3	167	7
Orthopaedic Hospital	Los Angeles	C. L. Lowman	2,178	58	17,826	$50	3	0	0	7/1	2-3	5	5
White Memorial Hospital *	Los Angeles	G. M. Taylor	275	3	5,932	$80	1	0	0	7/1	1-3	4	0
Hospital for Children *[2]	San Francisco	L. C. Abbott	328	4	1,716	$25	1	1	0	7/1	1	5	0
San Francisco Hospital *[1]	San Francisco	F. C. Bost	.....	100	.....	None	0	0	1	7/1	1	...	...
Shriners Hospital for Crippled Children	San Francisco	S. L. Haas	294	100	2,975	$50	1	0	0	7/1	1	0	0
University of California Hospital *[1]	San Francisco	H. C. Naffziger	224	58	7,215	$25	0	2	0	7/1	1+	1	1
Children's Hospital	Denver	D. M. McKenna	729	17	1,977	$50	1	1	0	7/1	1-2	1	1
New Haven Hospital *	New Haven, Conn.	A. Bassin	427	37	6,124	[a]	1	0	0	7/1	1+	12	3
Central Dispensary and Emergency Hospital *	Washington, D. C.	G. W. Leadbetter	1,323	22	2,622	$75	1	0	0	6/15	1	42	9
Children's Memorial Hospital	Chicago	F. A. Chandler	.....	65	3,278	$50	1	0	0	7/1	1	1	1
Cook County Hospital *[1]	Chicago	M. H. Hobart	895	100	18,931	$25	2	0	1	1/1&7/1	1-3	27	1
Michael Reese Hospital *[1]	Chicago	P. Lewin	730	43	7,782	$50	2	0	0	7/1	1-2	6	...
Research and Educational Hospital *	Chicago	H. B. Thomas	538	100	17,325	$50	3	0	0	7/1&9/1	1-3	5	4
Shriners Hospital for Crippled Children	Chicago	B. H. Moore	306	100	2,241	$65	1	0	0	7/1	1	0	0
University of Chicago Clinics *	Chicago	E. L. Compere	602	36	5,803	None	1	4	1	7/1	1-3	8	6
Indiana University Medical Center *[1]	Indianapolis	L. A. Ensminger	1,070	80	11,664	$33	1	2	0	7/1	1-3	13	4
University Hospitals *[1]	Iowa City	A. Steindler	3,814	87	6,985	$21	1	7	0	7/1	1-6	7	4
Kosair Crippled Children Hospital	Louisville, Ky.	W. B. Owen	782	100	.....	$25	1	1	0	7/1	2	1	0
Louisville City Hospital *	Louisville, Ky.	W. B. Owen	1,140	100	7,333[b]	$50	1	0	0	7/1	1-5	...	...
Charity Hospital *	New Orleans		2,226	100	9,459	$25	3	4	0	7/1	1-3	23	1
Shriners Hospital for Crippled Children	Shreveport, La.	H. A. Durham	194	100	1,088	$25	1	0	0	Varies	1	0	0
James Lawrence Kernan Hospital	Baltimore	A. F. Voshell	235	90	5,087	$92	1	0	0	7/1	1	2	1
Johns Hopkins Hospital *	Baltimore	G. E. Bennett	650	45	17,953	None	1	2	0	7/1&9/1	1-4	5	3
Boston City Hospital *[1]	Boston	O. J. Hermann	1,288	89	429	[a]	1	1	0	Varies	1+	24	0
Children's Hospital	Boston	F. R. Ober	360	53	9,334	$56	1	0	0	9/1	1	3	2
Lahey Clinic	Boston	G. E. Haggart	560	..	6,000	$100[c]	0	0	1	9/1	1-3	3	2
Massachusetts General Hospital *	Boston	S. M. Smith-Petersen	763	48	18,665	$42	1	0	0	1/1	1	3	1
Shriners Hospital for Crippled Children	Springfield, Mass.	R. N. Hatt	383	100	2,915	$25	1	0	0	7/1	1	2	0
University Hospital *[1]	Ann Arbor, Mich.	C. Badgley	3,422	74	15,325	$25	2	5	0	7/1	1-5	15	9
Henry Ford Hospital *	Detroit	C. L. Mitchell	695	28	11,808	$130[c]	1	1	0	9/1	2-3	2	1
Mayo Foundation	Rochester, Minn.	(See page 784)											
Gillette State Hospital for Crippled Children [2]	St. Paul	C. C. Chatterton	853	100	8,003	$50	0	0	1	7/1	1	8	8
State Hospital for Crippled Children	Columbia, Mo.	W. J. Stewart	649	1	1,754	$50	1	0	0	7/1	1-2	5	2
Kansas City General Hospital *	Kansas City, Mo.	F. D. Dickson	716	100	3,585	$50	1	0	0	7/1	1	40	33
St. Luke's Hospital *	Kansas City, Mo.	F. D. Dickson	642	..	3,125	$50	1	0	0	7/1	1	9	7
St. Mary's Group of Hospitals *	St. Louis	A. O'Reilly	191	39	4,488	$25	0	0	2	7/1	3	8	3
Shriners Hospital for Crippled Children	St. Louis	C. H. Crego	447	100	.....	$135	1	0	0	7/1	1-2	...	...
Nebraska Orthopedic Hospital	Lincoln	H. W. Orr	753	..	349[b]	$75	1	0	0	7/1	1-2	8	3
Jersey City Hospital *	Jersey City, N. J.		1,047	90	21,233	$75	1	1	0	7/1	1-2	44	2
Hospital and Home for Crippled Children	Newark, N. J.	J. E. Toye	255	82	3,000	$100	1	0	0	7/1	1	2	...
New Jersey Orthopaedic Hospital and Dispensary	Orange, N. J.	H. W. Smith	462	32	24,087	$50	1	1	0	1/1&7/1	1-1½	5	0
Kings County Hospital *	Brooklyn	J. L'Episcopo	1,196	100	14,204	$15	1	1	0	7/1	2	19	3
Long Island College Hospital *	Brooklyn	J. C. Rushmore	429	44	13,584	$22	1	1	0	7/1	2-3	8	2
Buffalo General Hospital *	Buffalo	W. W. Plummer	586	9	.....	$25	0	1	0	7/1	1	18	2
Bellevue Hospital *[1]	New York City	A. Krida	255	100	.....	$15	4[e]	0	0	1/1&7/1	2	...	...
Hospital for Joint Diseases *	New York City		3,006	60	43,954	$25	14	0	0	1/1	3	21	7
Hospital for Ruptured and Crippled	New York City	P. D. Wilson	1,480	17	24,853	$20	2	6	2	1/1&7/1	2	10	7
Metropolitan Hospital *[1]	New York City	A. H. Bingham	876	..	2,687	$75	1	0	0	7/1	1+	20	1
Mount Sinai Hospital *[1,10]	New York City		.....	55	.....	$50	1	0	0	7/1	1	...	...
New York Orthopaedic Dispensary and Hospital	New York City	B. P. Farrell	1,126	54	95,871	$33	8	0	0	Quart.	3	1	9
St. Luke's Hospital *	New York City	M. Cleveland	234	41	4,481	$25	1	0	0	1/1&7/1	2	4	3
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	R. P. Schwartz	656	62	7,571	$87	1	0	0	7/1	1-2	...	...
Sea View Hospital [2]	Staten Island, N. Y.	D. Bosworth	240	..	.....	None	2	2	0	1/1&7/1	1	26	10
New York State Reconstruction Home	West Haverstraw, N.Y.	C. Wallace	220	..	169	$100	1	1	0	3/1&9/1	1½	4	0
Duke Hospital *[1]	Durham, N. C.	D. Hart	539	63	5,356	$42	1	1	0	7/1	3-4	5	2
Cincinnati General Hospital *	Cincinnati	J. A. Freiberg	284	87	3,981	[a]	1	1	0	7/1	1-2	4	3
Cleveland Clinic Foundation Hospital	Cleveland	J. A. Dickson	346	..	6,376	$56	0	0	3	7/1	1-3	2	1
Mount Sinai Hospital *[1]	Cleveland	R. S. Reich	813	13	6,897	$60	1	0	0	7/1	1	4	1
University Hospitals *[1]	Cleveland	M. Harbin	598	28	7,006	$50	1	0	0	7/1	2	7	5
Bone and Joint Hospital and McBride Clinic	Oklahoma City	E. D. McBride	611	..	11,750	$50	1	0	0	1/1	2	6	0
St. Anthony Hospital *	Oklahoma City	W. K. West	749	8	.....	$50	1	0	0	7/1	1	4	0
State University and Crippled Children's Hospitals *	Oklahoma City	P. C. Colonna	1,340	95	8,744	$50	3	0	1	7/1	3	26	8
Mercy Hospital for Crippled Children	Tulsa, Okla.	W. Sisler	2,000	25	2,400	$50	2	0	0	7/1	1	22	5
Emanuel Hospital *	Portland, Ore.	R. B. Dillehunt	795	10	.....	$40	1	0	0	7/1	1	25	9
Shriners Hospital for Crippled Children	Portland, Ore.	R. B. Dillehunt	337	100	2,422	$40	1	0	0	7/1	1	0	0

Numerical and other references will be found on page 784.

18. ORTHOPEDIC SURGERY—(Continued)

		Chief of Service	Inpatients Treated [a]	Per Cent Free [a]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [a]	Autopsies
State Hospital for Crippled Children	Elizabethtown, Pa.	T. Outland	306	100	795	$100	3	0	0	9/1	2	4	1
Philadelphia Orthopaedic Hospital and Infirmary for Nervous Diseases	Philadelphia	A. B. Gill and D. P. Willard	269	74	4,290	$40	1	0	0	7/1	1	1	0
Temple University Hospital *	Philadelphia	J. R. Moore	624	43	5,150	$40	3	0	0	7/1	3	14	11
Robert Packer Hospital *	Sayre, Pa.	T. Outland and C. R. Hanlon	536	55	2,965	$75	1	0	0	9/1	2	2	0
Willis C. Campbell Clinic	Memphis, Tenn.	W. C. Campbell	1,149	35	11,291	$50	6	0	0	1/1&7/1	3	11	0
Parkland Hospital *[1]	Dallas, Tex.	R. Jackson	538	95	6,430	$10	1	0	0	7/1	1	36	7
Texas Scottish Rite Hospital for Crippled Children [1]	Dallas, Tex.	W. B. Carrell	722	100	2,884	$25	1	1	0	7/1	1	2	0
University of Virginia Hospital *	Charlottesville	R. V. Funsten	587	27	3,993	$33	1	1	0	7/1	1	12	2
Children's Orthopedic Hospital [1]	Seattle	H. J. Wyckoff	452	90	3,933	$100	1	0	0	7/1	1	6	5
State of Wisconsin General Hospital *[1]	Madison	R. E. Burns	3,602	84	4,509	$25	3	2	0	7/1	3	7	3
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	W. P. Blount	427	98	10,653	$50	1	1	0	7/1	1	58	15

19. OTOLARYNGOLOGY

Children's Hospital	Los Angeles	J. M. Brown	1,238	57	5,920	$90	1	0	0	7/1	1	3	3
Los Angeles County Hospital *[1]	Los Angeles	J. M. Brown	3,038	100	35,836	$10	3	0	0	4/1&7/1	2	51	19
White Memorial Hospital *	Los Angeles	B. N. Colver	1,370	3	13,527	$80	2	0	0	7/1	1-3	1	1
San Francisco Hospital *[1]	San Francisco	L. F. Morrison and H. A. Fletcher	660[h]	100	.....	$50	2	0	0	7/1	1	...	...
Stanford University Hospitals *[1]	San Francisco	E. C. Sewall	1,104	2	11,604	$25	1	1	0	7/1	1-2	4	4
University of California Hospital *[1]	San Francisco	H. C. Naffziger	834	58	8,713	$25	0	1	0	7/1	1+	1	...
New Haven Hospital *	New Haven, Conn.	N. Canfield	823	37	6,020	*	1	1	0	7/1	1+	6	4
Episcopal Eye, Ear and Throat Hospital	Washington, D. C.		6,244[b]	27	13,956	$7	1	3	0	3/1, 7/1, 11/1	1-1¾	4	1
Cook County Hospital *[1]	Chicago	S. J. Pearlman	7,125	100	27,849	$25	5	0	0	1/1&7/1	1-3	120	20
Illinois Eye and Ear Infirmary [1]	Chicago	H. S. Gradle	2,954	100	144,200	None	6	0	0	1/1&7/1	1	9	5
Michael Reese Hospital *	Chicago	J. Strauss	2,753	43	4,745	$50	1	0	0	7/1	1	9	6
Passavant Memorial Hospital *	Chicago	J. G. Wilson	316	14	1,831	None	1	0	0	1/1&7/1	1	...	...
Presbyterian Hospital *	Chicago	D. Hayden	1,667	13	.....	$50	1	1	0	1/1&7/1	1	2	1
Research and Educational Hospital *	Chicago	F. Lederer	817	100	13,601	$50	1	0	0	7/1&9/1	1-3	4	3
University of Chicago Clinics *	Chicago	J. R. Lindsay	925	36	12,790	None	1	2	1	7/1	1-2	5	5
Indianapolis City Hospital *	Indianapolis	R. Chappell	1,513	95	7,908	$41	1	1	0	7/1	1-2	4	2
Indiana University Medical Center *[1]	Indianapolis	C. H. McCaskey	758	80	2,189	$33	1	1	0	7/1	1-2	7	6
University Hospitals *[1]	Iowa City	D. M. Lierle	2,325	87	6,934	$21	1	4	0	7/1	1-6	25	10
Eye, Ear, Nose and Throat Hospital	New Orleans	F. E. Lejeune	3,212	..	30,594	None	6	6	0	7/1	2	12	5
Johns Hopkins Hospital *	Baltimore	S. J. Crowe	1,228	45	14,424	None	1	2	0	7/1&9/1	1-4	4	2
Beth Israel Hospital *	Boston	L. Arkin and H. M. Freedman	1,113	21	403	None	1	0	0	7/1	1	...	...
Lahey Clinic	Boston	W. B. Hoover	.....	..	10,000	$100[c]	0	0	1	7/1	2	...	...
Massachusetts Eye and Ear Infirmary	Boston	L. A. Schall	3,531	25	45,573	None	7	0	0	Quart.	1¾	23	10
Memorial Hospital *	Worcester, Mass.	G. Berry	1,515	13	3,038	$42	1	0	0	7/1	1	6	4
University Hospital *[1]	Ann Arbor, Mich.	A. C. Furstenberg	1,642	74	14,821	$25	1	2	0	7/1	1-4	18	10
Henry Ford Hospital *	Detroit	J. L. Dill	945	28	16,156	$130	1	2	0	9/1	3	5	2
University Hospitals *[1]	Minneapolis	H. Newhart	332	75	6,616	$50	0	0	2	1/1&7/1	3	8	3
Barnes Hospital *	St. Louis	W. Dean	1,214	9	13,867	$25	0	6	0	7/1	1-3	12	9
Jewish Hospital *	St. Louis	S. B. Westlake	388	24	3,954	$63	1	0	0	7/1	1-5	4	4
St. Louis City Hospital *	St. Louis	E. L. Myers	1,694	100	10,276	$50	1	0	0	7/1	1	32	19
St. Mary's Group of Hospitals *	St. Louis	W. E. Sauer	1,026	39	6,464	$25	1	0	0	7/1	1	3	1
Newark City Hospital *	Newark, N. J.	W. P. Eagleton	2,893	100	.....	$20	1	0	0	10/1	1	...	...
Brooklyn Eye and Ear Hospital	Brooklyn		6,504	..	64,422	None	8	0	0	Quart.	2	8	1
Jewish Hospital *[1]	Brooklyn	E. L. Berger	599	31	6,362	None	1	0	0	7/1	1	14	4
Kings County Hospital *	Brooklyn	M. C. Myerson	3,456	100	15,120	$15	1	2	0	7/1	2	72	24
Long Island College Hospital *[1]	Brooklyn	J. Moorhead	901	44	5,769	$32	1	1	0	7/1	2	72	0
Buffalo General Hospital *	Buffalo	J. F. Fairbairn	1,127	9	.....	$25	1	2	0	7/1	1	8	5
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *	Buffalo	J. F. Fairbairn	654	85	7,318	$59	1	2	0	7/1	3-4	6	0
Queens General Hospital *[1]	Jamaica, N. Y.	M. S. Bender	2,206	100	8,012	$15	1	1	0	7/1	1-2	14	10
Bellevue Hospital *[1]	New York City	J. Fowlkes	3,326	100	.....	Varies	6[d]	0	0	3/1, 7/1, 11/1	2	...	...
Flower-Fifth Avenue Hospital *	New York City	J. A. W. Hetrick	969	5	7,830	$50	1	0	0	7/1	2	2	1
Manhattan Eye, Ear and Throat Hosp.	New York City		14,564	16	91,552	None	8	0	0	Quart.	2	22	5
Metropolitan Hospital *[1]	New York City	J. A. W. Hetrick	1,231	..	5,422	$100	1	0	0	7/1	1+	5	0
Mount Sinai Hospital *[1,10]	New York City		.....	55	.....	$50	1	1	0	7/1	1	...	...
New York City Hospital *	New York City	O. C. Risch	1,248	100	3,207	$100	1	0	0	7/1	1	6	2
New York Eye and Ear Infirmary	New York City		3,081	13	45,413	None	8	0	0	Quart.	2-2¾	8	1
Presbyterian Hospital *[1]	New York City	J. D. Kernan	1,836	31	29,808	$42	1	5	0	1/1&7/1	3	17	8
Roosevelt Hospital *	New York City	C. N. Harper	961	9	7,702	None	1	1	0	Varies	2	1	0
St. Luke's Hospital *	New York City	W. C. Bowers	846	41	8,522	$25	1	2	0	3/1&9/1	2	1	0
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	C. A. Heatly	1,201	62	7,642	$42	1	1	0	7/1	2	...	...
Sea View Hospital [1]	Staten Island, N. Y.	M. C. Myerson	2,70[8]	..	.....	$100	2	0	0	1/1&7/1	1	...	...
Grasslands Hospital *	Valhalla, N. Y.	M. T. Smith	509	91	3,285	$75	1	0	0	7/1	1-2	11	9
Cincinnati General Hospital *	Cincinnati	S. Iglauer	1,349	87	8,023	*	0	2	0	7/1	1-2	9	7
City Hospital *	Cleveland	C. W. Engler	901	92	5,471	$42	1	1	0	7/1	1½	2	...
Cleveland Clinic Foundation Hospital	Cleveland	P. M. Moore	328	..	8,469	$56	0	0	3	7/1	1-2	2	1
St. Luke's Hospital *	Cleveland	W. H. Tuckerman	2,013	17	4,719	$25	1	1	0	6/25	2	7	3
University Hospitals *[1]	Cleveland	C. E. Pitkin	2,241	28	10,978	$25	1	2	0	Varies	2	6	1
University of Oregon Medical School Hospitals and Clinics *	Portland	R. A. Fenton	280	100	12,373	$40	1	0	0	7/1	1	2	1
George F. Geisinger Memorial Hospital *	Danville, Pa.	F. W. Davison	729	41	4,023	$50	1	0	0	7/1	1	4	1
Graduate Hospital of the University of Pennsylvania *	Philadelphia	G. B. Wood and R. Butler	2,488	61	6,805	None	2	0	0	7/1	1	13	8
Jefferson Medical College Hospital *	Philadelphia	L. H. Clerf and H. Williams	1,472	77	12,127	None	1	0	0	7/1	1-3	22	12
Temple University Hospital *	Philadelphia	R. F. Ridpath and M. S. Ersner	1,479	43	6,044	$40	1	0	0	7/1	3	2	2
Gill Memorial Eye, Ear and Throat Hosp.	Roanoke, Va.	E. G. Gill	719	20	11,535	$50	1	1	0	1/1&7/1	1-2	...	...

Numerical and other references will be found on page 784.

20. PATHOLOGY

Revision of list is now taking place in collaboration with the American Board of Pathology

	Chief of Service	Inpatients Treated[a]	Surgical Pathology: Gross Examinations	Surgical Pathology: Microscopic Examinations	Beginning Salary	Residents	Assistant Residents (Fellowships)		Service Begins	Length of Service (Years)	Deaths[a]	Autopsies
Hillman Hospital *	Birmingham, Ala.	G. S. Graham	12,854	.....	.....	$50	1	0	0	7/1	1	839	192
Children's Hospital	Los Angeles	C. M. Hyland	4,376	238	223	$60	1	0	0	7/1	1	131	119
Los Angeles County Hospital *[1]	Los Angeles	N. Evans	50,715	.....	.....	$10	6	0	0	1/1&7/1	3	3,968	2,025
St. Vincent's Hospital *	Los Angeles	J. W. Budd	7,305	1,830	1,830	$60[c]	1	0	0	7/1	1-3	192	79
Alameda County Hospital *[1]	Oakland, Calif.	G. Moore	12,513	4,208	2,846	$40	1	1	0	7/1	1-3	667	405
Collis P. and Howard Huntington Memorial Hospital *	Pasadena, Calif.	A. G. Foord	5,850	3,205	2,246	$100	1	0	0	7/1	3	242	158
French Hospital *	San Francisco	D. A. Wood	3,720	539	278	$50	1	0	0	7/1	1	124	59
Mount Zion Hospital *	San Francisco	G. Y. Rusk	3,984	1,639	671	$50	2	0	0	6/15	1	155	101
San Francisco Hospital *[1]	San Francisco	G. Y. Rusk and W. Dock	15,803	.....	2,318	$25	2	0	1	7/1	1	913	522
Stanford University Hospitals *[1]	San Francisco	W. Dock	9,037	2,000	2,075	$25	0	1	0	7/1	1	213	122
University of California Hospital *[1]	San Francisco	C. Connor	7,286	2,659	2,659	$25	1	0	0	7/1	1+	102	125
Denver General Hospital *	Denver	E. T. Thorsness	7,763	3,033	2,203	$50	1	0	0	7/1	1	567	536
New Haven Hospital *	New Haven, Conn.	M. C. Winternitz	9,765	2,686	2,686	[n]	1	3	0	7/1	1+	441	315
Children's Hospital[1]	Washington, D. C.	J. W. Lindsay and E. C. Rice	6,004	149	36	$50	1	0	0	7/1	1	207	135
Gallinger Municipal Hospital *	Washington, D. C.	H. H. Leffler	15,889	1,425	1,425	$25	1	0	0	7/1	1	1,143	430
Garfield Memorial Hospital *	Washington, D. C.	J. W. Lindsay	10,620	1,723	1,385	$50	1	0	0	7/1	1	251	118
Bibley Memorial Hospital[2]	Washington, D. C.	O. B. Hunter	8,310	2,182	453	$65	1	0	0	7/1	1	237	119
Grady Hospital *	Atlanta, Ga.	W. B. Matthews	21,274	2,066	2,052	$20	2	0	0	7/1	1+	1,563	458
University Hospital *[1]	Augusta, Ga.	F. R. Pund	8,057	2,261	1,809	$40	0	1	0	7/1	1	400	157
Emory University Hospital *	Emory University, Ga.	R. R. Kracke	6,711	1,567	1,567	$50	1	0	0	7/1	3	301	100
Children's Memorial Hospital	Chicago	W. G. Ribbs	3,785	196	195	[f]	1	0	0	1/1&7/1	1-2	119	86
Cook County Hospital *[1]	Chicago	W. Schiller	79,795	7,959	5,732	$25	3	0	16	1/1&7/1	1-3	6,561	1,246
Michael Reese Hospital *	Chicago	O. Saphir	17,570	3,744	3,744	$50	1	1	1	7/1	1+	520	308
Mt. Sinai Hospital *[1]	Chicago	I. Davidsohn	7,268	3,392	2,101	$50	1	1	0	6/1&7/1	1	232	117
Passavant Memorial Hospital *	Chicago	F. B. Queen	5,043	911	903	None	2	0	0	Varies	1-3	149	110
Presbyterian Hospital *	Chicago	C. W. Aptelbach	11,514	2,090	2,090	$50	2	0	0	1/1&7/1	1	270	155
Provident Hospital *	Chicago	J. H. Lewis	4,284	816	816	$50	1	0	0	9/1	1-3	172	74
Research and Educational Hospital *	Chicago	S. Levinson	5,831	1,500	1,500	$50	2	0	0	7/1&9/1	1-3	208	178
St. Luke's Hospital *	Chicago	E. F. Hirsch	12,100	4,689	4,350	$75	0	0	1	1/1	2	257	188
University of Chicago Clinics *	Chicago	H. G. Wells	10,776	1,476	1,244	$25	1	0	0	7/1	1	243	186
Evanston Hospital *	Evanston, Ill.	E. L. Benjamin	9,227	1,556	1,399	$83	0	0	1	10/1	1	173	136
St. Francis Hospital *	Evanston, Ill.	O. T. Schultz	9,292	1,979	341	$50	1	0	0	7/1	1+	194	91
Methodist Hospital of Central Illinois *	Peoria	M. G. Bohrod	6,226	2,108	1,858	$25	1	0	0	7/1	1-3	238	80
Indianapolis City Hospital *	Indianapolis	H. C. Thornton	11,671	2,527	2,476	$41	1	0	0	7/1	1	846	530
Indiana University Medical Center *[1]	Indianapolis	C. G. Culbertson	9,790	2,968	2,900	$33	2	0	1	7/1	1-3	416	251
Methodist Hospital *	Indianapolis	H. M. Banks	23,917	4,449	4,449	$50	1	2	0	7/1	1-2	514	164
Ball Memorial Hospital *	Muncie, Ind.	L. G. Montgomery	5,101	2,020	1,810	$75	1	0	0	7/1	1	277	104
University Hospitals *[1]	Iowa City	H. P. Smith	19,176	2,883	2,883	$85	1	0	0	7/1	1-6	511	306
University of Kansas Hospitals *	Kansas City, Kan.	H. R. Wahl	5,862	1,982	1,896	$50	1	3	0	7/1	1-3	209	188
St. Francis Hospital *	Wichita, Kan.	C. A. Hellwig	6,535	2,709	2,709	$25	1	0	0	7/1	1	290	155
Louisville City Hospital *	Louisville, Ky.	A. J. Miller	12,013	1,959	1,959	$14	3	0	0	7/1	1-2	600	323
Charity Hospital *	New Orleans	E. D. Plass	44,450	5,773	5,707	$25	2	1	0	7/1	1+	3,236	1,401
Touro Infirmary *[1]	New Orleans	J. Lanford	11,911	3,222	3,222	$50	1	0	0	7/1	2	335	159
Baltimore City Hospitals *	Baltimore	F. B. Kindell	8,831	1,220	1,193	$12	1	1	0	7/1	1	1,224	526
Johns Hopkins Hospital *	Baltimore	W. G. MacCallum	17,458	3,831	3,831	None	1	2	0	7/1&9/1	1-3	479	340
Boston City Hospital *[1]	Boston	F. Parker, Jr.	42,903	4,170	4,170	None	5	0	0	Varies	1+	2,093	800
Boston Lying-in Hospital[16,39]	Boston	A. T. Hertig	5,671	4,214	4,214	$50	2	0	0	1/1&7/1	1	58	60
Children's Hospital	Boston	N. B. Nichols	9,557	678	678	$56	1	0	0	7/1	1	125	84
Massachusetts General Hospital *	Boston	T. B. Mallory	15,352	6,468	6,468	$42	1	0	0	7/1	1	547	228
Massachusetts Memorial Hospitals *	Boston	C. F. Branch	7,572	.....	1,480	$100	1	0	0	7/1	1-3	173	118
New England Deaconess Hospital[17]	Boston	S. Warren	7,655	5,215	5,215	$15	1	2	0	7/1	1-2	252	187
Peter Bent Brigham Hospital *	Boston	S. B. Wolbach	5,190	2,095	2,095	$83	1	0	0	1/1&9/1	1-3	345	226
Worcester City Hospital *	Worcester, Mass.	R. H. Goodale	11,181	3,306	2,800	None	1	0	0	7/1	1	329	218
Worcester State Hospital[1]	Worcester, Mass.	W. Freeman	821	.....	3,618	None	2	0	0	1/1&7/1	1	192	100
University Hospital *[1]	Ann Arbor, Mich.	C. V. Weller	23,847	7,828	7,828	$25	0	1	0	7/1	1	693	401
City of Detroit Receiving Hospital *[10]	Detroit	O. A. Brines	20,831	2,607	.....	$83	1	1	0	7/1	1-2	1,691	655
Harper Hospital *	Detroit	P. F. Morse	17,089	5,651	5,651	...	1	0	0	7/1	1+	441	106
Henry Ford Hospital *	Detroit	P. E. Hartman	11,364	3,321	3,321	$1200	2	0	1	7/1	1-3	333	175
Providence Hospital *	Detroit	D. H. Kaump	12,082	3,000	2,763	...	1	0	0	7/1	1	470	132
Eloise Hospital and Infirmary *	Eloise, Mich.	S. E. Gould	14,382	5,065	1,228	$67	1	0	1	7/1	1	1,024	338
Hurley Hospital *	Flint, Mich.	G. R. Backus	7,822	3,268	2,539	$42	1	0	0	7/1	1	518	187
St. Luke's Hospital *	Duluth, Minn.	A. H. Wells	6,966	1,500	1,449	$20	1	0	0	7/1	1-3	258	195
Mayo Foundation	Rochester, Minn.	(See page 784)											
Ancker Hospital *	St. Paul	W. Boyle	10,169	1,415	1,187	$50	1	0	0	6/1	1	749	544
Kansas City General Hospital *	Kansas City, Mo.	R. E. Duncan	12,067	2,386	1,800	$50	2	0	0	7/1	1-3	772	587
St. Joseph Hospital *	Kansas City, Mo.	R. W. Kerr	6,187	2,800	2,400	$50	1	0	0	6/20	1-3	248	178
St. Luke's Hospital *	Kansas City, Mo.	F. C. Helwig	5,135	3,822	2,784	$50	1	0	0	7/1	1-3	186	135
Barnes Hospital *	St. Louis	R. A. Moore	10,091	2,374	2,374	$25	1	0	0	7/1	1	323	212
Jewish Hospital *	St. Louis	S. H. Gray	6,658	1,466	1,466	...	1	0	7	7/1	1	239	68
St. Louis City Hospital *	St. Louis	S. H. Gray	18,954	2,796	2,796	$50	1	0	0	7/1	1-2	1,206	671
Creighton Memorial St. Joseph's Hosp. *	Omaha	B. C. Russum	8,451	.....	.....	$50	1	0	0	7/1	1+	312	94
University of Nebraska Hospital *	Omaha	J. P. Tollman	3,439	1,041	1,041	$50	1	0	0	7/1	1	167	136
Mary Hitchcock Memorial Hospital *	Newark, N. J.	R. E. Miller	4,855	1,160	1,037	$83	1	0	0	7/1	1	106	82
Mountainside Hospital *	Montclair, N. J.	M. J. Fein	6,423	2,034	2,034	$100	1	0	0	7/1	1+	212	67
Newark Beth Israel Hospital *	Newark, N. J.	W. Antopol	11,738	3,739	3,739	$25	1	1	0	1/1	2	381	102
Albany Hospital *[1]	Albany, N. Y.	A. W. Wright	12,200	5,096	5,096	$25	1	5	0	7/1	1	452	308
Bender Hygienic Laboratory	Albany, N. Y.	J. J. Clemmer	*	5,959	5,959	$100	1	1	0	7/1	1-4	..	184
Binghamton City Hospital *	Binghamton, N. Y.	V. W. Bergstrom	6,666	.....	.....	$50	1	0	0	7/1	1	356	125
Brooklyn Hospital *	Brooklyn	J. A. deVeer	8,395	1,867	1,750	$25	1	0	0	7/1	1-3	191	119
Cumberland Hospital *	Brooklyn	S. H. Polayes	8,540	.....	.....	$15	1	0	0	7/1	1	300	201
Jewish Hospital *[1]	Brooklyn	M. Lederer	12,702	6 340	5,234	$25	1	1	0	7/1	1	512	223
Kings County Hospital *	Brooklyn	W. W. Hala	59,068	.....	.....	$50	1	4	0	7/1	1-2	5,261	1,001
Long Island College Hospital *	Brooklyn	J. Oliver	9,330	2,065	2,065	$45	1	0	0	7/1	1	536	139
St. John's Hospital *	Brooklyn	J. Dorgeloh	5,393	1,055	1,045	$25	1	0	0	7/1	1	249	105
Buffalo General Hospital *	Buffalo	K. Terplan	10,618	5,301	5,301	$25	1	2	0	7/1	1	525	233
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *	Buffalo	W. F. Jacobs	10,964	2,501	2,501	$59	1	2	0	7/1	1-3	1,003	292
Millard Fillmore Hospital *	Buffalo	N. Elton	6,837	4,129	3,066	$25	1	0	0	7/1	1	267	84
Meadowbrook Hospital *	Hempstead, N. Y.	T. J. Curphey	6,186	1,469	1,414	$50	2	0	0	7/1	1-2	442	223
Queens General Hospital *[1]	Jamaica, N. Y.	A. A. Angrist	13,206	4,291	2,747	$15	1	1	0	7/1	1	761	480
Fordham Hospital *	New York City	L. R. Ferraro	14,552	15,924	13,485	$15	1	0	0	7/1	1	931	334

Numerical and other references will be found on page 784.

20. PATHOLOGY—(Continued)

		Chief of Service	Inpatients Treated	Surgical Pathology: Gross Examinations	Surgical Pathology: Microscopic Examinations	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths	Autopsies
Harlem Hospital ★	New York City	S. Weintraub	18,968	2,503	2,503	$15	1	1	0	1/1&7/1	1	1,366	344
Lenox Hill Hospital ★	New York City	G. L. Rohdenburg	11,734	2,090	2,090	None	1	0	0	7/1	1	264	131
Lincoln Hospital ★	New York City	C. Brown	9,666	10,030	10,030	$15	2	0	0	7/1	1	812	267
Metropolitan Hospital [x1]	New York City	A. Saccone	13,151	1,337	1,300	$70	1	0	0	7/1	1+	989	263
Montefiore Hosp. for Chronic Diseases[x1]	New York City	D. Marine	1,715	617	617	$50	1	0	0	7/1	1	445	320
Morrisania City Hospital ★	New York City	W. Aronson	12,044	2,764	2,764	$15	1	0	0	7/1	1	909	277
Mount Sinai Hospital [x1,10]	New York City	P. Klemperer	16,726	6,031	6,031	....	2	0	5	7/1	1	782	350
New York City Hospital ★	New York City	J. R. Lisa	10,658	1,551	1,250	$100	1	0	0	7/1	1-2	804	330
New York Hospital ★	New York City	E. L. Opie	16,312	3,554	3,458	None	1	0	0	7/1	1-2	481	276
New York Post-Graduate Medical School and Hospital ★	New York City	M. N. Richter	9,146	6,201	6,201	$90	1	0	0	7/1	1	258	109
Presbyterian Hospital [x1]	New York City	J. W. Jobling	17,449	3,979	3,979	None	1	0	0	7/1	1	538	262
Roosevelt Hospital ★	New York City	W. W. Brandes	7,555	2,172	2,162	$42	1	0	0	7/1	1-2	302	112
St. Luke's Hospital ★	New York City	F. C. Wood	8,457	2,346	2,346	$100	0	1	0	1/1	1-3	308	160
Sydenham Hospital ★	New York City	A. M. Ginzler	4,639	2,204	1,147	None	1	0	0	1/1	1+	227	115
Willard Parker Hospital	New York City	V. B. Dolgopol	4,156	115	115	$100	1	0	0	1/1	1	110	60
Strong Memorial and Rochester Municipal Hospitals ★	Rochester, N. Y.	G. H. Whipple	14,673	2,873	2,873	$42	2	1	2	7/1	1-2	545	305
Grasslands Hospital ★	Valhalla, N. Y.	G. Dalldorf	5,798	1,900	1,374	$117	2	0	0	1/1&7/1	1-3	484	330
Duke Hospital [x1]	Durham, N. C.	W. D. Forbus	11,363	8,557	8,557	$42	1	5	1	7/1	1-4	358	193
Cincinnati General Hospital [x1]	Cincinnati	R. S. Austin	15,979	.....	2,709	*	6	0	0	7/1	1-2	1,136	781
City Hospital ★	Cleveland	H. S. Reichle	14,094	2,383	1,789	$42	4	1	0	7/1	1	1,307	526
Mount Sinai Hospital [x1]	Cleveland	B. S. Kline	8,638	1,781	1,781	$50	1	0	0	7/1	1	257	81
St. Luke's Hospital ★	Cleveland	R. Dominguez	12,421	2,779	2,530	$25	1	1	0	6/25	2	339	118
St. Vincent Charity Hospital ★	Cleveland	D. J. Rehbock	6,317	1,195	1,174	$50	1	0	0	7/1	1	348	139
University Hospitals [x1]	Cleveland	H. T. Karsner	20,151	4,439	4,439	$25	1	1	0	7/1	2	575	348
Starling-Loving University Hospital ★	Columbus	H. L. Reinhart	6,958	2,705	2,044	$25	1	1	0	7/1	1	235	190
Miami Valley Hospital ★	Dayton, O.	W. M. Simpson	10,749	4,008	4,008	$75	1	0	0	7/1	1	472	175
State University Crippled Children's Hospital ★	Oklahoma City	M. Hart	6,532	1,963	1,462	$50	1	0	1	7/1	1-3	270	149
St. Vincent's Hospital ★	Portland, Ore.	T. D. Robertson	10,863	5,360	3,341	$25	2	0	0	1/1&7/1	1	342	198
University of Oregon Medical School Hospitals and Clinics ★	Portland	F. R. Menne	7,569	1,809	1,809	$40	3	0	0	7/1	1	649	407
Abington Memorial Hospital ★	Abington, Pa.	J. Elman	6,532	1,749	1,711	$100	1	0	0	10/1	1+	218	126
George F. Geisinger Memorial Hosp.★	Danville, Pa.	H. F. Hunt	5,625	1,406	1,358	$50	1	0	0	7/1	1	232	85
Pittsburgh City Home and Hospitals [1]	Mayview, Pa.	G. H. Fetterman	806	169	169	$135	1	1	0	9/1	1	624	125
Germantown Dispensary and Hospital ★	Philadelphia	F. B. Lynch, Jr.	7,506	1,282	711	$125	1	0	0	7/1	1	284	109
Graduate Hospital of the University of Pennsylvania ★	Philadelphia	E. A. Case	6,952	1,825	1,825	None	1	0	0	7/1	1	246	111
Hahnemann Hospital ★	Philadelphia	S. W. Sappington	12,960	3,417	3,417	$50	2	0	0	9/1	1-3	501	194
Hospital of the University of Pennsylvania [x1]	Philadelphia	E. B. Krumbhaar	13,266	1,645	1,645	None	2	0	1	7/1&9/1	1	244	164
Jewish Hospital ★	Philadelphia	E. Steinfeld	9,077	2,066	2,066	$75	1	0	0	6/15	1	399	229
Mount Sinai Hospital ★	Philadelphia	D. R. Meranze	7,534	1,900	1,900	None	1	0	0	9/1	1	185	101
Pennsylvania Hospital ★	Philadelphia	J. T. Bauer	8,508	1,855	1,855	$20	0	0	2	7/1&9/1	1-2	203	150
Philadelphia General Hospital [x1]	Philadelphia	J. H. Clark	25,369	2,892	2,709	$50	2	0	0	7/1	1-2	3,229	1,937
Presbyterian Hospital ★	Philadelphia	R. P. Custer	5,375	1,284	1,275	$50	1	0	0	6/1	3	248	204
Temple University Hospital ★	Philadelphia	L. W. Smith	9,951	19,059	19,059	$40	2	0	0	9/1	1-3	101	55
Allegheny General Hospital ★	Pittsburgh	S. R. Haythorn	9,350	2,235	2,235	$85	2	0	0	9/1	1	330	161
Children's Hospital	Pittsburgh	G. W. Grier	3,386	179	179	$42	1	0	0	9/1	1	204	81
Elizabeth Steel Magee Hospital	Pittsburgh	G. W. Grier	9,466	1,888	1,800	$42	2	0	0	9/1	1	196	78
Mercy Hospital ★	Pittsburgh	H. H. Permar	12,599	3,206	3,046	$90	2	0	0	9/1	1	405	153
Montefiore Hospital ★	Pittsburgh	K. Yardumian	7,110	1,201	1,201	$50	1	0	0	9/1	1-3	229	96
Presbyterian Hospital ★	Pittsburgh	G. R. Lacy	3,116	1,192	.....	$42	1	0	0	9/1	1	124	51
St. Francis Hospital ★	Pittsburgh	A. J. Bruecken	14,217	5,701	1,883	$65	4	0	0	9/1	1	442	96
Western Pennsylvania Hospital ★	Pittsburgh	P. Gross	9,591	1,859	1,859	$75	1	1	0	7/1	2	257	93
Reading Hospital [x13]	Reading, Pa.	E. D. Funk	6,561	1,733	1,121	$83	1	0	0	7/1	1-2	272	183
Rhode Island Hospital ★	Providence	B. E. Clarke	7,890	2,460	2,460	$50	1	0	0	7/1	1	525	289
John Gaston Hospital ★	Memphis, Tenn.	H. C. Schmeisser	15,976	2,044	2,044	$32	1	1	0	7/1	1-3	1,096	257
Nashville General Hospital ★	Nashville, Tenn.	W. A. DeMonbreun	7,152	937	919	$20	1	1	0	7/1	1-2	424	177
Vanderbilt University Hospital ★	Nashville, Tenn.	E. W. Goodpasture	7,226	1,351	1,351	$35	1	2	0	7/1	2	351	218
Baylor University Hospital ★	Dallas	J. M. Hill	15,343	5,013	5,013	$50	1	0	1	7/1	1	345	120
Parkland Hospital [x1]	Dallas	A. B. Cairns	10,771	2,637	2,124	$10	1	0	0	7/1	1	661	208
Jefferson Davis Hospital ★	Houston, Tex.	D. G. Henderson	11,005	1,889	1,889	$50	1	0	0	7/1	1-2	1,076	351
Mary Fletcher Hospital [x9]	Burlington, Vt.	E. H. Buttles	10,579	1,629	1,225	$100	0	0	1	7/1	1-2	319	121
Medical College of Virginia, Hospital Division [x1]	Richmond	F. L. Apperly	10,767	3,425	3,379	$50	1	0	0	7/1	1	704	244
Charleston General Hospital ★	Charleston, W. Va.	W. Putschar	7,402	2,421	1,606	$25	1	0	0	7/1	1-3	244	94
State of Wisconsin General Hospital [x1]	Madison	W. D. Stovall	12,263	3,502	3,502	$25	1	0	0	7/1	3	353	227
Columbia Hospital ★	Milwaukee	G. H. Hansmann	3,299	1,452	948	$25	2	0	0	7/1	1-3	112	63
St. Joseph's Hospital [x1]	Milwaukee	J. C. Grill	8,159	1,739	1,710	$100	1	0	0	7/1	1	336	100
Milwaukee County Hospital [x1]	Wauwatosa, Wis.	J. C. Grill	20,179	1,993	1,993	$50	1	2	0	7/1	1+	1,180	439
Queen's Hospital ★	Honolulu, Hawaii	N. P. Larsen	10,301	2,580	2,320	$200	1	0	0	9/1	1-3	410	255

21. PEDIATRICS

Revision of list is now taking place in collaboration with the American Board of Pediatrics

		Chief of Service	Inpatients Treated	Per Cent Free	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths	Autopsies
Children's Hospital	Birmingham, Ala.	A. A. Walker	1,144	61	7,070	$25	1	1	0	7/1	1	32	9
Hillman Hospital ★	Birmingham, Ala.	A. A. Walker	801	100	5,106	$50	1	0	0	7/1	1	96	30
California Babies' and Children's Hosp.[1]	Los Angeles	R. P. Deakers	399	27	10,270	$100	1	0	0	7/1	1	3	2
Children's Hospital	Los Angeles	V. E. Stork	2,532	57	47,352	$40	1	8	0	Quart.	1	130	114
Los Angeles County Hospital [x1]	Los Angeles	O. Reiss	2,550	100	4,026	$10	2	0	0	4/1&10/1	3	174	92
White Memorial Hospital [x1]	Los Angeles	M. B. Brooks	174	3	7,867	$80	1	0	0	7/1	1-3	6	4
Children's Hospital of the East Bay	Oakland, Calif.	C. Sweet	2,101	...	13,902	$25	1	1	0	7/1	1	39	33
Hospital for Children [x2]	San Francisco	C. F. Gelston	453	4	3,803	$25	0	1	0	7/1	1	23	13
San Francisco Hospital [x1]	San Francisco	A. U. Christie and R. F. Seitz	915	100	.....	$50	1	0	0	7/1	1	...	...
Stanford University Hospitals [x1]	San Francisco	H. K. Faber	573	2	15,816	$25	1	2	0	7/1	1-2	10	8

Numerical and other references will be found on page 784.

21. PEDIATRICS—(Continued)

		Chief of Service	Inpatients Treated [3]	Per Cent Free [4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [6]	Autopsies
University of California Hospital [*1]	San Francisco	F. S. Smyth	584	58	13,693	$25	1	2	0	7/1	1+	30	27
Children's Hospital [1]	Denver	F. B. Stephenson	2,861	17	.....	$50	1	4	0	7/1	1-2	78	58
Denver General Hospital [*]	Denver	W. Jones	1,050	100	.....	$50	1	0	0	7/1	1	40	40
New Haven Hospital [*]	New Haven, Conn.	G. Powers	1,771	37	14,007	[a]	1	3	0	7/1	1+	60	48
Children's Hospital [1]	Washington, D. C.	J. S. Wall	6,904	85	63,828	$20	12	2	0	1/1&7/1	1	207	135
Freedmen's Hospital [*1]	Washington, D. C.	A. deG. Smith	473	85	3,895	[a]	0	1	0	7/1&10/1	1-2	35	13
Gallinger Municipal Hospital [*1]	Washington, D. C.	W. M. Yater	999	99	3,617	$25	1	1	0	7/1	1	55	44
Grady Hospital [*]	Atlanta, Ga.	M. H. Roberts	1,243	100	20,203	$40	2	0	0	7/1	1+	118	57
Henrietta Egleston Hosp. for Children [1]	Atlanta, Ga.	M. H. Roberts	1,085	86	.....	$40	2	0	0	1/1&7/1	1	71	36
University Hospital [*1]	Augusta, Ga.	C. M. Burpee	855	29	2,263	$40	1	1	0	7/1	1	92	32
Children's Memorial Hospital [1]	Chicago	J. Brennemann	3,913	65	65,866	$50	4	13	0	1/1&7/1	1	119	86
Cook County Hospital [*1]	Chicago	M. L. Blatt	10,097	100	14,288	$25	8	0	1	1/1&7/1	1-3	407	347
Michael Reese Hospital [*]	Chicago	J. Gerstley	1,493	43	8,304	$100	2	0	0	7/1	1	101	94
Presbyterian Hospital [*]	Chicago	C. Gruke	980	13	.....	$50	1	0	0	7/1	1	24	18
Provident Hospital [*1]	Chicago	E. W. Beasley	962	62	7,907	$50	1	0	2	9/1	1-3	51	37
Research and Educational Hospital [*]	Chicago	J. Hess	260	100	7,417	$50	2	0	0	7/1&9/1	1-3	20	18
St. Vincent's Infant and Maternity Hosp.	Chicago	M. L. Blatt	842	100	.....	$50	1	0	0	7/1	1	12	12
University of Chicago Clinics [*1]	Chicago	F. W. Schlutz	1,136	38	17,137	None	1	8	1	1/1&7/1	1-3	28	24
Indianapolis City Hospital [*1]	Indianapolis	J. C. Carter	619	95	8,129	$41	1	0	0	7/1	1	102	61
Indiana University Medical Center [*1]	Indianapolis	M. Winters	1,403	80	4,284	$41	1	1	0	7/1	1-2	167	64
University Hospitals [*1]	Iowa City	P. C. Jeans	958	87	2,025	$21	1	2	0	7/1	1-6	61	40
University of Kansas Hospitals [*1]	Kansas City, Kan.	F. C. Neff	771	56	2,038	$50	1	0	0	7/1	1	41	33
Louisville City Hospital [*]	Louisville, Ky.	P. F. Barbour	1,682	98	10,035	$14	1	3	0	7/1	1-3	88	31
Charity Hospital [*]	New Orleans	E. A. Socola and R. A. Strong	2,282	100	18,573	$25	3	3	0	7/1	1-2	229	102
Touro Infirmary [*1]	New Orleans	M. Loeber	497	35	10,305	$25	1	0	0	7/1	1	33	20
Baltimore City Hospitals [*]	Baltimore	T. C. Goodwin	343	92	.....	$12	1	1	0	7/1	1	42	22
Johns Hopkins Hospital [*]	Baltimore	E. A. Park	1,065	45	37,017	None	1	3	0	7/1&9/1	1-5	99	77
Union Memorial Hospital [*1]	Baltimore	D. W. Smith	332	15	3,871	$30	1	1	0	7/1	1-2	8	8
Boston City Hospital [*1]	Boston	M. J. English	5,075	89	13,349	$83	1	0	0	Varies	1+	211	95
Boston Floating Hospital [1]	Boston	E. W. Barron	1,019	95	12,783	$10	1	3	0	Varies	1	19	15
Children's Hospital	Boston	K. D. Blackfan	876	53	27,131	None	6	0	0	1/1, 5/1, 9/1	1½	28	19
Massachusetts General Hospital [*1]	Boston	H. H. Higgins	408	48	6,455	$42	1	0	0	10/1	2	33	22
University Hospitals [*1]	Ann Arbor, Mich.	D. M. Levine	1,441	74	8,286	$25	1	3	0	7/1	1-3	57	26
Children's Hospital [1]	Detroit	T. B. Cooley	3,998	85	31,505	$25	2	14	0	7/1	1-2	313	197
Henry Ford Hospital [*]	Detroit	J. A. Johnston	1,011	28	9,947	$130[c]	3	0	0	7/1	1-5	37	24
Minneapolis General Hospital [*1]	Minneapolis	A. V. Stoesser	1,640	86	11,852	$25	1	0	3	7/1	1-3	89	66
University Hospitals [*1]	Minneapolis	I. McQuarrie	2,012	75	6,357	$50	1	0	1	1/1&7/1	3	125	94
Mayo Foundation	Rochester, Minn.	(See page 784)											
Children's Mercy Hospital [1]	Kansas City, Mo.	C. J. Eldridge	1,934	100	16,362	$25	2	0	0	7/1	1	85	64
Wheatley-Provident Hospital [1]	Kansas City, Mo.	F. Hogue	158	22	.....	$75	1	0	0	7/1	2-4	6	1
Homer G. Phillips Hospital [*]	St. Louis	W. Rupe	2,675	100	2,709	$75	1	1	0	7/1	1-3	160	27
St. Louis Children's Hospital [1]	St. Louis	A. F. Hartmann	3,459	59	25,412	$25	1	8	0	7/1	1-3	114	80
St. Louis City Hospital [*]	St. Louis	J. J. Jaudon	916	100	4,569	$50	1	0	0	7/1	1	62	30
St. Mary's Group of Hospitals [*]	St. Louis	J. Zahorsky	1,348	39	10,110	$25	0	0	2	7/1	3	37	21
Jersey City Hospital [*]	Jersey City, N. J.	...	697	90	2,166	$100	1	0	0	7/1	1	79	14
Albany Hospital [*1]	Albany, N. Y.	H. L. K. Shaw	446	3	1,253	$25	1	1	0	7/1	1	34	26
Cumberland Hospital [*]	Brooklyn	T. B. Givan	1,615	100	9,192	$100	1	1	0	7/1	1	84	64
Jewish Hospital [*1]	Brooklyn	B. Kramer	669	31	10,116	$25	1	2	0	7/1	1	52	33
Kings County Hospital [*]	Brooklyn	G. Brockway and L. Krahulik	2,973	100	7,047	$15	2	2	0	7/1	2	174	101
Long Island College Hospital [*1]	Brooklyn	C. A. Weymuller	441	44	14,135	$22	1	2	0	7/1	2	65	32
Norwegian Lutheran Deaconesses' Home and Hospital [*1]	Brooklyn	C. Fischer	283	1	2,222	None	1	0	0	7/1	2	32	22
Children's Hospital [1]	Buffalo	H. R. Lohnes	4,787	48	.....	$50	1	1	0	7/1	1	139	74
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) [*1]	Buffalo	F. J. Gustina	123	85	3,228	$50	1	2	0	7/1	3-4	19	8
Queens General Hospital [*1]	Jamaica, N. Y.	H. A. Reisman	2,457	100	5,964	$15	1	2	0	7/1	1	118	85
Babies Hospital	New York City	R. McIntosh	2,219	43	39,916	None	1	11	0	7/1	1	100	44
Bellevue Hospital [*]	New York City	C. Smith	2,184	100	.....	Varies	14	0	0	Quart.	3	...	...
Flower-Fifth Avenue Hospital [*]	New York City	R. A. Benson	1,456	5	3,137	$50	1	0	0	7/1	1	54	34
Harlem Hospital [*1]	New York City	M. Gleich	1,370	100	15,627	$15	1	0	0	7/1	1	84	40
Lincoln Hospital [*]	New York City	A. T. Martin	3,989	100	7,793	None	1	0	0	7/1	1	61	15
Metropolitan Hospital [*1]	New York City	R. A. Benson	1,211	..	8,150	$100	1	1	0	7/1	1+	60	23
Morrisania City Hospital [*]	New York City	L. H. Barenberg	668	100	4,636	$15	1	0	0	1/1&7/1	1	54	23
Mount Sinai Hospital [*1,10]	New York City	.....	.....	55	.....	$50	1	1	0	1/1&7/1	1	...	...
New York City Hospital [*]	New York City	C. S. Boyd	728	100	4,930	$100	1	0	0	7/1	1	43	31
New York Foundling Hospital [7]	New York City	.....	1,124	1	8,720	$25	7	0	0	1/1&7/1	1	24	21
New York Hospital [*]	New York City	S. Z. Levine	928	5	3,680	$25	1	5	0	7/1	1-5	89	65
New York Post-Graduate Medical School and Hospital [*]	New York City	A. G. De Sanctis	1,233	16	24,804	$60	1	1	0	1/1&7/1	1	27	15
St. Luke's Hospital [*1]	New York City	F. E. Johnson	520	41	6,524	$25	1	1	0	1/1&7/1	1-2	21	15
Strong Memorial and Rochester Municipal Hospitals [*]	Rochester, N. Y.	S. W. Clausen	1,311	62	16,252	$42	2	3	2	7/1	1-4	61	46
Sea View Hospital [*]	Staten Island, N. Y.	B. Schick	399	..	.....	$100	4	0	0	1/1&7/1	1	22	9
Syracuse Memorial Hospital [*]	Syracuse	B. C. South	1,325	30	.....	None	1	0	0	7/1	1	28	20
Grasslands Hospital [*1]	Valhalla, N. Y.	F. D. Barnes	615	91	1,982	$75	1	1	0	1/1&7/1	1-2	15	13
Duke Hospital [*1]	Durham, N. C.	W. C. Davison	696	63	6,451	$42	1	1	0	7/1	3-4	55	25
Watts Hospital [*]	Durham, N. C.	A. H. London	634	24	615	$50	1	0	0	7/1	1	18	5
Children's Hospital	Akron, O.	N. E. Wentsler	1,164	..	11,296	$75	1	0	0	7/1	1	59	27
Children's Hospital	Cincinnati	A. G. Mitchell	4,389	70	28,964	$25	7	0	7	7/1	2	198	65
Cincinnati General Hospital [*1]	Cincinnati	A. G. Mitchell	1,138	87	8,691	[a]	6	8	0	7/1	1-2	115	49
University Hospitals [*1]	Cleveland	H. J. Gerstenberger	1,048	28	26,516	$25	1	2	0	7/1	2	69	46
Children's Hospital [1]	Columbus, O.	E. H. Baxter	2,642	98	52,594	$40	1	3	0	7/1	1-2	107	54
University of Oregon Medical School Hospitals and Clinics [*]	Portland	J. B. Bilderback	2,561	100	9,389	$40	1	0	0	7/1	1	73	56
Children's Hospital [1]	Philadelphia	J. Stokes, Jr.	1,845	51	45,167	None	3	10	0	7/1	1	62	41
Children's Hospital of the Mary J. Drexel Home [1]	Philadelphia	J. A. Babbitt	828	24	13,955	$100	1	0	0	7/1	1	11	6
Hahnemann Hospital [*]	Philadelphia	C. S. Raue	443	52	5,623	$85	1	0	0	9/1	1	...	...
Hospital of the University of Pennsylvania [*]	Philadelphia	J. Stokes	301	27	3,782	None	1	0	0	7/1	1	19	11
Jewish Hospital [*1]	Philadelphia	.....	302	27	1,221	None	1	0	0	6/15	1	10	7
Philadelphia General Hospital [*1]	Philadelphia	.....	2,143	95	4,880	$100	1	0	0	7/1	1-2	...	...
St. Christopher's Hospital for Children [1]	Philadelphia	F. Knauss	1,941	87	69,178	$50	5	0	0	7/1	1	41	26
Temple University Hospital [*]	Philadelphia	W. E. Nelson	1,384	43	5,886	$40	2	0	0	7/1	3	29	27
Children's Hospital	Pittsburgh	H. T. Price	1,556	68	6,831	$35	1	3	0	9/1	1	181	67
Roper Hospital [*]	Charleston, S. C.	M. W. Beach	501	74	10,143	$40	0	1	0	7/1	1	72	24
T. C. Thompson Children's Hospital [1]	Chattanooga, Tenn.	H. D. Long	1,192	73	17,294	$50	1	1	0	7/1	1	117	17

Numerical and other references will be found on page 784.

21. PEDIATRICS—(Continued)

		Chief of Service	Inpatients Treated [#]	Per Cent Free [*]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [#]	Autopsies
John Gaston Hospital *	Memphis, Tenn.	E. C. Mitchell	1,452	95	7,116	$65	1	0	0	7/1	1	93	26
George W. Hubbard Hospital of Meharry Medical College *	Nashville, Tenn.	J. W. Jones	454	60	3,306	$75	1	0	0	7/1	2	29	10
Vanderbilt University Hospital *	Nashville, Tenn.	H. Casparis	1,337	..	15,022	$35	1	2	4	7/1	1	106	70
Bradford Memorial Hosp. for Babies [1]	Dallas, Tex.	H. L. Moore	938	55	5,454	$25	1	1	0	7/1	1	102	19
John Sealy Hospital *	Galveston, Tex.	B. Reading	367	73	7,090	$50	1	0	0	7/1	1	47	25
University of Virginia Hospital *	Charlottesville	L. T. Royster	1,173	27	4,612	$50	1	1	0	7/1	1	62	23
Medical College of Virginia, Hospital Division *[1]	Richmond	L. E. Sutton	1,353	5	3,496	$25	0	2	0	7/1	1	157	53
State of Wisconsin General Hospital *[1]	Madison	J. E. Gonce	684	84	2,210	$25	1	0	0	7/1	3	37	24
Milwaukee Children's Hospital	Milwaukee	E. Epstein	1,921	63	17,617	$30	5	0	0	1/1&7/1	1	79	46
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	F. E. Drew	2,882	98	8,829	$50	2	0	0	7/1	1-3	46	30

22. PHYSICAL THERAPY

Stanford University Hospitals *[1]	San Francisco	W. Northway	2,751	2	5,073	$25	1	0	0	7/1	1	...	...
Michael Reese Hospital *	Chicago	C. O. Molander	450	43	6,861	...	1	0	0	7/1	1	...	...
Mayo Foundation	Rochester, Minn.	(See page 784)											

23. PLASTIC SURGERY

Mayo Foundation	Rochester, Minn.	(See page 784)											
Kings County Hospital *	Brooklyn	W. Coakley	.....	100	1,595	$15	1	1	0	7/1	1	22	0
Presbyterian Hospital *[1]	New York City	A. O. Whipple	.....	31	.....	None	2	0	0	7/1	1	...	...
Graduate Hospital of the University of Pennsylvania *[2]	Philadelphia	R. H. Ivy	182	61	600	None	1	0	0	7/1	1	2	1

24. PSYCHIATRY

Revision of list is now taking place in collaboration with the American Board of Psychiatry and Neurology

Compton Sanitarium	Compton, Calif.	G. Myers	85	..	.....	$100	1	0	0	Varies	1+	8	1
Stanford University Hospital *[1,12]	San Francisco	G. S. Johnson	420	2	11,276	$25	1	2	0	7/1	1-2	4	0
University of California Hospital *[1]	San Francisco	W. J. Kerr	98	58	2,265	$25	0	1	0	7/1	1+	...	...
Mendocino State Hospital [1]	Talmage, Calif.	W. Rapaport	2,783	66	24	$140	6	0	0	Varies	1+	113	44
Colorado Psychopathic Hospital	Denver	F. G. Ebaugh	899	70	5,889	$100	0	0	6	9/1	3	19	13
Neuro-Psychiatric Institute of the Hartford Retreat	Hartford, Conn.	C. C. Burlingame	842	6	.....	$200	4	0	6	Varies	1½	12	5
Connecticut State Hospital	Middletown	R. L. Leak	1,080	..	.....	$50	1	0	0	Varies	1	315	88
New Haven Hospital *	New Haven, Conn.	E. Kahn	309	37	3,603	*	1	7	0	7/1	1+	5	3
Delaware State Hospital [1]	Farmhurst	M. Tarumianz	1,490	85	3,800	$50	2	0	0	Varies	1-2	103	38
Gallinger Municipal Hospital *	Washington, D. C.	J. L. Gilbert	3,231	99	.....	$25	0	1	0	7/1	1	111	53
St. Elizabeths Hospital [1]	Washington, D. C.	R. H. Guthrie	7,216	..	.....	$167	10	0	0	7/1&10/1	1	35	27
Cook County Hospital *[1]	Chicago	F. J. Gerty	6,141	100	.....	$75	3	0	2	1/1&7/1	1-3	131	14
Michael Reese Hospital *[12]	Chicago	M. Gitelson	21	43	2,322	$50	2	0	0	1/1&7/1	1	0	0
Research and Educational Hospital *[1]	Chicago	H. D. Singer	146	100	.....	$50	3	0	2	7/1	1-3	2	2
University of Chicago Clinics *[1]	Chicago	D. Slight	159	36	3,504	None	1	0	0	7/1	1-3	...	...
Elgin State Hospital [1]	Elgin, Ill.	E. Liebert	6,667	100	1,885	$52	3	0	0	Varies	1	369	177
Central State Hospital	Indianapolis	M. A. Bahr	2,670	98	.....	$157	4	0	0	Varies	1+	167	36
Indianapolis City Hospital *[12]	Indianapolis	L. D. Carter	542	95	1,888	$41	1	0	0	7/1	1-2	20	10
Logansport State Hospital	Logansport, Ind.	C. L. Williams	2,247	94	.....	$100	2	3	0	Varies	1-3	158	27
Iowa State Psychopathic Hospital [1]	Iowa City	A. H. Woods	353	84	1,566	$64	2	1	1	7/1	1	1	1
Osawatomie State Hospital [1]	Osawatomie, Kan.	T. L. Foster	2,043	89	912	$85	3	0	0	1/1&7/1	1-2	136	44
Menninger Sanitarium [1]	Topeka, Kan.	W. C. Menninger	155	..	200	$120	4	0	0	1/1&7/1	1	2	1
U. S. Public Health Service Hospital [7]	Lexington, Ky.	R. H. Felix	1,935	98	.....	$150	7	0	0	7/1	1-2	15	11
Johns Hopkins Hospital *	Baltimore	A. Meyer	327	45	4,949	None	1	2	0	7/1&9/1	1-6	1	1
Spring Grove State Hospital [1]	Catonsville, Md.	S. W. Weltmer	2,516	99	.....	$100	3	0	0	Varies	1-3	126	66
Springfield State Hospital [1]	Sykesville, Md.	K. B. Jones	3,387	100	482	$100	4	0	0	Varies	1-2	208	76
Sheppard and Enoch Pratt Hospital [1]	Towson, Md.	R. McC. Chapman	689	6	.....	$100	9	0	0	1/1&7/1	1-3	9	7
McLean Hospital [1]	Belmont, Mass.	K. J. Tillotson	417	6	.....	$75	7	0	0	Varies	1-2	9	2
Boston Psychopathic Hospital [1]	Boston	C. Campbell	2,114	75	2,757	$75	8	0	0	9/1	1+	17	6
Boston State Hospital	Boston	H. F. Norton	2,202	96	.....	$45	1	0	0	Varies	1	292	126
Massachusetts General Hospital *	Boston	S. Cobb	89	48	.....	$42	1	1	0	1/1&7/1	1-2	...	...
Foxboro State Hospital [1]	Foxboro, Mass.	G. B. Pearson	1,393	..	538	$45	1	0	0	7/1	1	111	43
Gardner State Hospital [1]	Gardner, Mass.	F. W. Moore	1,673	96	633	$45	1	0	0	6/1	1	67	31
Danvers State Hospital	Hathorne, Mass.	M. Ruiz	3,200	90	2,000	$45	2	0	0	Varies	1	252	147
Medfield State Hospital	Medfield, Mass.	E. K. Holt	2,095	99	.....	$150	1	0	0	Varies	1-2	93	40
Northampton State Hospital [1]	Northampton, Mass.	G. C. Randall	2,603	82	974	$150	1	0	0	Varies	1+	189	80
Grafton State Hospital [1]	North Grafton, Mass.	H. L. Paine	1,634	..	1,047	None	1	0	0	7/1	1	69	25
Taunton State Hospital	Taunton, Mass.	R. G. Osterheld	2,267	84	2,964	$150	5	0	0	7/1	1-2	229	115
Westboro State Hospital	Westboro, Mass.	W. B. Terhune	2,187	87	1,179	$150	3	0	0	7/1	1-2	128	31
Worcester State Hospital [1]	Worcester, Mass.	W. Malamud	.....	100	.....	None	7	0	0	7/1	1	192	100
University Hospital *[1]	Ann Arbor, Mich.	R. Waggoner	484	74	3,172	$25	1	1	0	7/1	1-3	2	0
City of Detroit Receiving Hospital *[10]	Detroit	J. M. Stanton	6,255	100	1,508	$83	1	1	0	7/1	1+	190	77
Henry Ford Hospital *	Detroit	T. J. Heldt	571	28	3,263	$130	1	0	0	9/1	3	6	3
Eloise Hospital and Infirmary *	Eloise, Mich.	M. H. Hoffmann	4,034	95	2,852	$150	7	0	0	7/1	2	230	71
Pontiac State Hospital	Pontiac, Mich.	P. V. Wagley	.....	..	.....	$200	2	2	0	Varies	3	...	...
Traverse City State Hospital	Traverse City, Mich.	R. P. Sheets	2,961	..	.....	$200	4	0	0	Varies	1-3	173	72
Ypsilanti State Hospital	Ypsilanti, Mich.	O. R. Yoder	3,283	90	628	$165	2	0	0	Varies	1-3	150	63
Minneapolis General Hospital *[1,12]	Minneapolis	J. C. Michael	1,323	86	1,778	$25	0	0	1	7/1	1-3	160	53
University Hospitals *[1]	Minneapolis	J. C. McKinley	255	75	.....	$50	1	0	1	1/1&7/1	3	4	0
Mayo Foundation	Rochester, Minn.	(See page 784)											
St. Peter State Hospital [1]	St. Peter, Minn.	G. H. Freeman	2,768	75	.....	$75	1	0	0	7/1	1-2	220	55
State Hospital No. 1	Fulton, Mo.	J. R. Bunch	3,000	96	.....	$75	2	0	0	7/1	1-3	179	51
State Hospital No. 2	St. Joseph, Mo.	R. Hanks	3,335	..	.....	$75	6	0	0	7/1	1-3	252	60
City Sanitarium	St. Louis	F. M. Grogan	4,053	84	.....	$150	8	0	0	7/1	1	181	91
St. Louis City Hospital *[12]	St. Louis	I. Levy	1,813	100	9,233	$50	1	3	0	7/1	1-3	215	81
Hastings State Hospital	Ingleside, Nebr.	J. C. Nielsen	1,994	90	1,121	$125	3	0	0	Varies	1-2	115	42
Norfolk State Hospital	Norfolk, Nebr.	G. E. Charlton	1,168	90	.....	$140	4	0	0	Varies	1+	37	26
Bishop Clarkson Memorial Hospital *	Omaha	A. E. Bennett	341	3	200	$50	0	1	0	7/1	1	11	6
New Hampshire State Hospital [1]	Concord, N. H.	C. H. Dolloff	2,801	86	1,005	$150	1	2	0	Varies	1+	224	55
New Jersey State Hospital [1]	Greystone Park	M. A. Curry	7,250	17	.....	$160	12	0	0	Varies	1+	476	114
New Jersey State Hospital [1]	Marlboro	J. B. Gordon	3,140	26	951	$50	1	0	0	7/1	1	202	125
Albany Hospital *[1,12]	Albany, N. Y.	D. E. Cameron	771	3	1,569	$25	1	1	0	7/1	1	51	31
Binghamton State Hospital [1]	Binghamton, N. Y.	W. C. Garvin	3,592	92	398	$150	3	0	0	Varies	1+	193	87
Buffalo State Hospital [1]	Buffalo	C. Fletcher	3,033	87	2,157	$200	3	0	0	Varies	1+	213	62
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *[1,12]	Buffalo	S. W. Hartwell	1,497	85	3,768	$50	0	1	0	7/1	3-4	159	39

Numerical and other references will be found on page 784.

24. PSYCHIATRY—(Continued)

	Chief of Service		Inpatients Treated	Per Cent Free	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths	Autopsies
Central Islip State Hospital [1]	Central Islip, N. Y.	D. Corcoran	7,255	91	3,031	$150	10	0	0	1/1&7/1	1-3	413	157
Hastings Hillside Hospital	Hastings on Hudson, N. Y.	L. Wender	131	30	1,398	$100	1	0	0	10/1	1	...	...
Gowanda State Homeopathic Hospital	Helmuth, N. Y.	E. V. Gray	2,947	90	.....	$150	7	0	0	Varies	1+	176	88
Kings Park State Hospital [1]	Kings Park, N. Y.	C. S. Parker	5,873	88	2,338	$150	16	0	0	Varies	1+	228	97
Marcy State Hospital	Marcy, N. Y.	W. W. Wright	3,016	94	.....	$150	3	0	0	Varies	1+	233	41
Middletown State Homeopathic Hosp. [1]	Middletown, N. Y.	R. Woodman	3,015	87	1,029	$150	4	0	0	7/1	1	186	80
Bellevue Hospital *[1]	New York City	K. Bowman	28,118	100	.....	Varies	13[2]	0	0	1/1&7/1	2	...	...
New York Hospital *	New York City	O. Diethelm	292	5	1,067	$50	2	7	0	7/1	1-4	3	3
New York State Psychiatric Institute and Hospital [1]	New York City	N. D. C. Lewis	393	..	1,788	$25	8	0	0	1/1&7/1	1-2	0	0
U. S. Marine Hospital	New York City	S. D. Vestermark	833	100	130	$150	0	2	0	7/1	1	6	2
St. Lawrence State Hospital [1]	Ogdensburg, N. Y.	C. F. Pritchard	2,447	91	1,100	$150	6	0	0	Varies	1+	182	90
Hudson River State Hospital	Poughkeepsie, N. Y.	R. P. Folsom	5,171	89	7,724	$150	1	0	0	Varies	1+	371	111
Rochester State Hospital	Rochester, N. Y.	J. L. Van De Mark	3,680	88	2,112	$150	3	0	0	Varies	1+	242	84
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	R. C. A. Jaenike	541	62	1,121	$125[6]	1	0	0	7/1	1	...	...
Utica State Hospital [1]	Utica, N. Y.	W. E. Merriman	2,264	64	1,859	$150	4	0	0	Varies	1+	203	59
Grasslands Hospital *	Valhalla, N. Y.	T. P. Brennan	1,318	91	705	Varies	2	3	0	1/1&7/1	1-3	41	25
New York Hospital-Westchester Division	White Plains, N. Y.	C. O. Cheney	696	5	.....	$125	2	4	0	1/1&7/1	1-3	10	4
Duke Hospital *	Durham, N. C.	R. S. Crispell	1,252	63	1,276	$42	1	0	0	7/1	1-4	...	...
Cincinnati General Hospital *[1]	Cincinnati	E. A. North	1,227	87	2,704	*	1	2	0	7/1	1-2	24	10
Longview State Hospital	Cincinnati	E. A. Baber	2,600	..	4,654	$75	2	0	0	7/1	1-2	163	72
City Hospital *	Cleveland		831	92	1,833	$42	1	2	0	7/1	1	36	20
Columbus State Hospital [1]	Columbus, O.	N. Michael	2,588	..	750	$50	1	0	0	7/1	1-3	219	93
Toledo State Hospital	Toledo, O.	O. O. Fordyce	3,452	66	1,493	$100	2	0	0	7/1	1	225	51
Harding Sanitarium [1]	Worthington, O.	G. T. Harding	276	..	.....	$150	1	0	0	9/1	1-2	5	0
Danville State Hospital	Danville, Pa.	R. Chamberlain	...	96	3,058	$100	1	0	0	Varies	1+	100	22
Harrisburg State Hospital [1]	Harrisburg, Pa.	H. K. Petry	3,602	88	327	$125	2	0	0	Varies	1-3	118	40
Norristown State Hospital	Norristown, Pa.	A. P. Noyes	3,992	67	801	$125	8	0	0	Varies	12+	188	82
Friends Hospital	Philadelphia	T. L. Dehne	245	..	.....	$100	2	0	0	7/1	1-2	10	3
Institute of the Pennsylvania Hospital [1]	Philadelphia	L. H. Smith	646	..	3,000	Varies	0	0	3	7/1	1	2	1
Pennsylvania Hospital, Department for Mental and Nervous Diseases [1]	Philadelphia	L. H. Smith	407	3	2,202	Varies	0	0	4	1/1&7/1	1	11	3
Philadelphia General Hospital *[1,12]	Philadelphia		4,347	95	.....	$150	1	0	0	7/1	1-2	...	...
Temple University Hospital *	Philadelphia	O. S. English	.....	43	.....	$40	1	0	0	7/1	3	...	...
St. Francis Hospital *	Pittsburgh	C. H. Henninger	4,077	30	438	$80	3	0	0	9/1	3	112	20
Warren State Hospital [1]	Warren, Pa.	R. H. Israel	2,400	..	512	$125	5	0	0	9/1	1-3	210	48
State Hospital for Mental Diseases [1]	Howard, R. I.	C. P. Fitzpatrick	3,290	98	1,162	$75	5	0	0	7/1	1	189	66
Butler Hospital	Providence, R. I.	A. H. Ruggles	359	..	.....	$50	5	0	0	1/1&7/1	1-2	18	2
Charles V. Chapin Hospital	Providence, R. I.	H. E. Klene	641	46	2,184	$75	1	0	0	1/1	1	32	19
Galveston State Psychopathic Hospital [1]	Galveston, Tex.	L. R. Brown	535	20	.....	$100	5	1	0	Varies	3	2	1
John Sealy Hospital *[13]	Galveston, Tex.	T. H. Harris	737	73	1,846	$50	1	1	0	7/1	1	25	9
University of Virginia Hospital *	Charlottesville	H. C. Wilson	369	27	1,294	*	1	2	0	7/1	1	7	3
Western State Hospital [1]	Ft. Steilacoom, Wash.	W. N. Keller	3,249	..	.....	$100	3	0	0	7/1	1-3	284	152
Eastern State Hospital [1]	Medical Lake, Wash.	C. W. Miller, Jr.	2,176	..	62	$100	3	0	0	7/1	1	121	72
Northern State Hospital	Sedro-Woolley, Wash.	J. W. Doughty	2,350	80	.....	$100	2	0	0	7/1	1	151	106
State of Wisconsin General Hosp. *[1,12]	Madison	W. F. Lorenz	1,082	84	402	$25	1	1	0	7/1	1	22	14
Milwaukee County Hospital for Mental Diseases [1]	Wauwatosa, Wis.	M. Kasak	1,517	..	870	$50	4	0	0	1/1&7/1	3	42	18
Milwaukee Sanitarium [12]	Wauwatosa, Wis.	L. H. Ziegler	306	..	.....	$75	1	0	0	7/1	1-3	9	1

25. RADIOLOGY

Revision of list is now taking place in collaboration with the American Board of Radiology

	Chief of Service		Roentgenographic Examinations	X-Ray Treatments	Radium Treatments	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths	Autopsies
Los Angeles County Hospital *[1]	Los Angeles	R. A. Carter	75,772	18,336	1,067	$75	3	0	0	7/1	3	3,968	2,025
St. Vincent's Hospital *	Los Angeles	K. S. Davis	5,773	837	.....	...	1	0	0	7/1	2	192	79
San Francisco Hospital *[1]	San Francisco	L. Bryan and L. H. Garland	53,387	4,151	150	$50	4	0	0	7/1	1	913	522
Stanford University Hospital *[1]	San Francisco	R. R. Newell	11,532	7,126	248	$25	1	1	0	7/1	1-2	213	122
University of California Hospital *[1]	San Francisco	R. S. Stone	10,145	10,942	409	$35	1	2	0	7/1	1+	162	125
Colorado General Hospital *[13]	Denver	E. A. Schmidt	6,637	2,351	29	$100	1	0	0	7/1	2	234	187
Hartford Hospital *	Hartford, Conn.	D. J. Roberts	11,176	6,722	197	$25	1	0	0	1/1&7/1	2-3	570	276
New Haven Hospital *	New Haven, Conn.	C. P. Wilson	15,837	3,605	93	*	1	2	0	7/1	1+	441	315
Garfield Memorial Hospital *	Washington, D. C.	E. A. Merritt	5,860	10,461	133	$50	1	0	1	7/1	1	231	118
Georgetown University Hospital *	Washington, D. C.	F. O. Coe	4,539	2,512	67	$50	0	0	2	7/1	2	190	67
Sibley Memorial Hospital *	Washington, D. C.	J. F. Elward	3,073	112	30	$65	1	0	0	7/1	1-3	237	119
Veterans Administration Facility	Washington, D. C.	W. P. Hynes	8,632	1,640	11	...	1	0	0	Varies	1+	167	200
Walter Reed General Hospital *	Washington, D. C.	H. H. Lowry	16,778	2,938	404	...	2	0	2	Varies	2-4	227	183
Piedmont Hospital *	Atlanta, Ga.	H. Rudisill, Jr.	1,350	450	24	$50	1	0	0	Varies	3	75	24
Cook County Hospital *[1]	Chicago	M. J. Hubeny	88,242	31,462	210	$25	3	0	2	1/1&7/1	1-3	6,561	1,246
Michael Reese Hospital *	Chicago	R. A. Arens	8,807	3,200	6,652	$25	0	0	2	Varies	3	520	308
Passavant Memorial Hospital *	Chicago	J. T. Case	5,440	2,456	930	$75	0	0	2	1/1&7/1	3	140	110
Presbyterian Hospital *	Chicago	F. H. Squire	15,967	4,586	103	$50	2	0	0	1/1&7/1	2	270	155
Provident Hospital *	Chicago	D. W. Anthony	3,962	840	37	$50	1	0	0	7/1	1-3	172	74
Research and Educational Hospital *	Chicago	A. Hartung	9,785	3,000	.....	$50	2	0	0	7/1&9/1	1-3	208	178
St. Luke's Hospital *	Chicago	E. L. Jenkinson	11,621	5,700	.....	$25	3	0	0	4/1&10/1	3-5	257	188
University of Chicago Clinics *	Chicago	P. C. Hodges	16,864	6,212	58	$25	0	3	3	7/1	1	243	186
Evanston Hospital *	Evanston, Ill.	E. R. Crowder	13,527	229	.....	$83	0	1	1	7/1	3	173	136
Veterans Administration Facility	Hines, Ill.	A. E. Williams and C. G. Lyons	58,380	21,600	4,560	...	0	0	1	1/1	1-3	958	412
Indiana University Medical Center *[1]	Indianapolis	A. P. Eichtersmacht	16,949	6,666	120	$33	0	0	1	7/1	3	416	251
Methodist Hospital *	Indianapolis	H. C. Ochsner	9,490	3,437	.....	$50	1	1	0	7/1	1-3	514	164
University Hospital *[1]	Iowa City	H. D. Kerr	25,490	17,886	53	$21	1	2	0	7/1	1-6	511	306
Charity Hospital *	New Orleans	J. B. Irwin	64,463	14,901	277	$25	0	4	0	7/1	1-3	3,236	1,401
Southern Baptist Hospital *	New Orleans	L. W. Magruder, Jr.	5,475	2,862	110	$100	1	0	0	7/1	1-3	229	46
Touro Infirmary *[1]	New Orleans	M. D. Teitelbaum	23,163		.....	$50	1	0	0	7/1	3	335	159
Johns Hopkins Hospital *	Baltimore	J. W. Pierson	126,942	9,731	216	None	1	1	0	7/1&9/1	1-3	479	340
University Hospital *	Baltimore	H. J. Walton	18,439	6,716	282	$50	1	2	0	7/1	1-2	298	185
Beth Israel Hospital *	Boston	S. A. Robins	11,396	3,362	52	$66	1	0	0	7/1	1-3	208	102

Numerical and other references will be found on page 784.

25. RADIOLOGY—(Continued)

		Chief of Service	Roentgenographic Examinations	X-Ray Treatments	Radium Treatments	Beginning Salary	Residents	Assistant Residencies	Fellowships	Service Begins	Length of Service (Years)	Deaths[6]	Autopsies
Boston City Hospital *[1]	Boston	P. F. Butler	64,456	7,208	52	$83	1	0	0	Varies	3	2,093	800
Children's Hospital	Boston	G. M. Wyatt	14,100	745	....	....	1	0	0	7/1	1	234	181
Lahey Clinic	Boston	H. F. Hare	50,000	6,000	50	$100[9]	0	0	1	6/1	1-3	....	....
Massachusetts General Hospital *	Boston	G. W. Holmes	28,081	7,889	.....	$42	1	2	0	7/1	3	547	228
Massachusetts Memorial Hospitals *[1]	Boston	G. Levene	9,116	2,679	49	$42	1	2	0	1/1	3	173	118
New England Deaconess Hospital	Boston	J. H. Marks	6,488	6,299	323	$75	1	0	0	7/1	1-3	252	187
Peter Bent Brigham Hospital *	Boston	M. C. Sosman	15,679	3,806	41	$83	2	1	0	7/1	3	345	236
University Hospital *[1]	Ann Arbor, Mich.	F. J. Hodges	39,357	12,578	210	$25	3	3	0	7/1	1-3	693	401
City of Detroit Receiving Hospital *[10]	Detroit	J. C. Kenning	34,056	960	.....	$83	1	1	0	7/1	1-2	1,691	655
Grace Hospital *	Detroit	R. H. Stevens	11,143	4,400	13	$50	1	1	0	9/1	3	521	224
Harper Hospital *	Detroit	L. Reynolds	15,000	11,200	300	$45	0	1	0	7/1	1-2	441	113
Henry Ford Hospital *	Detroit	H. P. Daub	21,921	3,606	189	$125[9]	1	1	0	7/1	3	333	175
Hurley Hospital *	Flint, Mich.	M. W. Clift	6,083	2,343	41	$42	0	0	1	7/1	3	518	187
University Hospitals *[1]	Minneapolis	L. G. Rigler	31,089	11,993	511	$50	0	0	3	7/1	4	450	328
Mayo Foundation	Rochester, Minn.	(See page 784)											
Barnes Hospital *	St. Louis	S. Moore	52,008	3,834	282	$25	1	1	0	7/1	1-3	323	212
Homer G. Phillips Hospital *	St. Louis	E. W. Spingig	11,206	1,381	50	$75	1	1	0	7/1	1-3	708	239
St. Louis City Hospital *	St. Louis	L. Sante	48,175	2,948	172	$50	1	2	0	7/1	1-3	1,206	671
Creighton Memorial St. Joseph's Hosp. *	Omaha	J. F. Keely	2,311	2,686	33	$25	2	0	0	1/1&7/1	3	312	94
University of Nebraska Hospital *	Omaha	H. B. Hunt	4,349	2,979	122	$50	1	0	1	7/1	1	167	136
Mary Hitchcock Memorial Hospital *	Hanover, N. H.	L. K. Sycamore	5,208	1,777	39	$42	1	0	0	7/1	3	106	82
Jewish Hospital *[1]	Brooklyn	M. G. Wasch	18,423	4,934	38	None	1	2	0	1/1&7/1	1½	512	233
Kings County Hospital *	Brooklyn	R. Rendich	66,485	23,328		$15	2	1	0	7/1&9/1	2-3	5,261	1,001
Long Island College Hospital *[1]	Brooklyn	A. L. L. Bell	12,131	3,840	84	$22	1	1	0	7/1	3	336	139
Methodist Hospital *	Brooklyn	G. W. Cramp	5,316	1,251	84	$50	1	1	0	7/1	1	258	103
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *	Buffalo	C. R. Orr	10,962	3,788	8	$50	0	1	0	7/1	3	1,003	292
Queens General Hospital *[1]	Jamaica, N. Y.	I. S. Startz	20,538	2,574	197	$15	2	0	0	7/1	2	761	480
New Rochelle Hospital *	New Rochelle, N. Y.	A. J. Chilko	7,374	4,116	17	$50	1	1	0	7/1	2-3	178	74
Bellevue Hospital *[1,20]	New York City	L. Friedman	193,726	12,415	1,319	$15	6[a]	0	0	1/1&7/1	1½	2,505	786
Beth Israel Hospital *[1]	New York City	I. S. Hirsch	7,562	2,361	102	None	3	0	0	1/1, 7/1, 10/1	1	277	120
Bronx Hospital *	New York City	W. Snow	6,221	1,529	25	$50	1	0	0	7/1	1	271	83
Flower-Fifth Avenue Hospital *	New York City	J. C. Howard	5,572	1,717	39	None	1	0	0	Varies	3	315	77
Lenox Hill Hospital *	New York City	W. H. Stewart	14,004	2,655	18	$50	1	0	0	7/1	2	364	131
Montefiore Hospital for Chronic Diseases *[1,20]	New York City	A. J. Bendick	6,734	7,597	138	$50	3	0	0	1/1&7/1	1	445	320
Morrisania City Hospital *	New York City	S. F. Weltzner	21,597	9,270	174	$15	1	0	0	1/1	1	909	277
Mount Sinai Hospital *[1,10]	New York City	M. L. Sussman	23,153	8,618	44	$50	2	2	0	1/1&7/1	2	782	350
New York City Hospital *	New York City	G. J. Plehn	10,341	132	.....	$100	1	1	0	7/1	1	804	330
New York Hospital *	New York City	J. R. Carty	35,529	6,803	.....	$25	1	2	0	7/1	1-3	481	276
New York Polyclinic Medical School and Hospital *	New York City	E. E. Smith	15,045	1,619	6	None	1	0	0	7/1	2	187	53
New York Post-Graduate Medical School and Hospital *	New York City	W. H. Meyer	8,780	6,527	1,374	$40	1	2	0	1/1&7/1	1½	258	109
New York University College of Medicine Clinic	New York City	I. S. Hirsch	3,500	.....	.....	None	0	0	1	1/1	1	....	....
Presbyterian Hospital *[1]	New York City	R. Golden	36,206	17,280	207	$42	1	2	0	9/1	3	538	262
Roosevelt Hospital *	New York City	W. H. Boone	13,392	2,411	129	$25	1	0	0	7/1	1-2	302	112
St. Luke's Hospital *	New York City	E. J. Hanan	18,263	4,693	155	$50	1	1	0	7/1	2	818	360
Welfare Hospital for Chronic Diseases *	New York City	H. K. Taylor	3,085	....	....	$100	1	0	0	7/1	1+	148	57
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	S. L. Warren	19,141	5,009	475	$83[a]	1	3	2	7/1	1-4	545	365
Sea View Hospital [1]	Staten Island, N. Y.	E. Kraft	19,321	.....	.....	$100	1	0	0	1/1&7/1	1	526	185
Grasslands Hospital *	Valhalla, N. Y.	I. G. Debbie	11,049	7,695	45	$117	1	0	0	1/1&7/1	1-3	484	330
Duke Hospital *[1]	Durham, N. C.	R. J. Reeves	23,621	8,893	1,043	$42	1	2	0	7/1	1-4	358	193
Watts Hospital *	Durham, N. C.	W. W. Vaughan	7,108	3,503	67	...	1	0	0	7/1	3-5	123	34
Cincinnati General Hospital *	Cincinnati	H. G. Reineke	26,919	7,964	587	*	1	3	0	7/1	1-2	1,126	781
Jewish Hospital *	Cincinnati	S. Brown	5,071	1,141	39	$45	1	0	0	7/1	1-2	202	64
City Hospital *	Cleveland	H. Hauser	38,256	5,770	.....	$36	2	1	0	7/1	1	1,307	528
Cleveland Clinic Foundation Hospital	Cleveland	B. H. Nichols	17,302	4,000	2,000	$56	0	0	3	7/1	3	177	81
University Hospitals *[1]	Cleveland	E. Freedman	22,319	6,222	218	$25	0	2	1	7/1	2	575	348
State University and Crippled Children's Hospitals *	Oklahoma City	J. E. Heatley	16,815	10,452	208	$50	1	0	0	7/1	1	270	149
St. Vincent's Hospital *	Portland, Ore.	S. E. Rees	4,494	702	.....	$50	1	0	0	8/1	3	342	198
University of Oregon Medical School Hospitals and Clinics *	Portland	D. L. Palmer	19,733	3,646	310	$50	1	0	0	7/1	3	649	407
Abington Memorial Hospital *	Abington, Pa.	J. D. Zulick	2,300	1,567	.....	$75	1	0	0	7/1	1+	218	126
Bryn Mawr Hospital *	Bryn Mawr, Pa.	R. S. Bromer	7,217	2,655	169	$50	1	0	0	7/1	1-3	145	70
Graduate Hospital of the University of Pennsylvania *	Philadelphia	A. Finkelstein	10,210	3,275	86	$25	0	0	2	7/1	2	246	111
Hospital of the Protestant Episcopal Church *	Philadelphia	R. Barden	7,706	1,417	.....	$50	1	0	0	1/1	1-2	361	273
Hospital of the University of Pennsylvania *[1]	Philadelphia	E. P. Pendergrass	13,769	7,257	49	None	2	0	0	10/1	1	244	164
Jefferson Medical College Hospital *	Philadelphia	K. Kornblum	16,524	6,803	.....	None	2	0	0	7/1	1-3	526	257
Pennsylvania Hospital *	Philadelphia	P. A. Bishop	10,620	2,079	116	$30	0	0	2	7/1	2	263	150
Philadelphia General Hospital *[1]	Philadelphia	B. P. Widmann	20,634	16,873	$100	1	0	0	0	8/1	1-2	3,229	1,937
Presbyterian Hospital *	Philadelphia	E. W. Spackman	14,357	2,095	72	$50	1	0	1	6/1&7/1	1-2	248	204
Temple University Hospital *	Philadelphia	W. E. Chamberlain	14,924	3,939	.....	$40	3	0	0	9/1	3	101	55
Mercy Hospital *	Pittsburgh	H. N. Mawhinney	9,666	672	264	....	1	0	0	9/1	1	484	158
Robert Packer Hospital *	Sayre, Pa.	S. P. Ferry	4,754	1,739	.....	$58	1	0	1	9/1	3	206	107
Roper Hospital *	Charleston, S. C.	B. Kalayjian	6,059	18,041	11	$40	1	1	0	7/1	1-2	529	194
John Gaston Hospital *	Memphis, Tenn.	W. D. Anderson	13,584	3,866	75	$32	1	1	8	7/1	1-3	1,066	257
Methodist Hospital *	Memphis, Tenn.	S. W. Coley	2,906	2,320	50	$50	1	0	0	7/1	3	176	63
Vanderbilt University Hospital *	Nashville, Tenn.	C. C. McClure	11,710	3,836	60	$35	0	1	0	7/1	2	351	218
Baylor University Hospital *	Dallas, Tex.	C. L. Martin	2,531	3,991		$35	0	0	1	7/1	1-2	345	139
Parkland Hospital *[1]	Dallas, Tex.	P. E. Wigby	14,804	4,019	61	$10	1	0	0	7/1	1	661	208
John Sealy Hospital *	Galveston, Tex.	J. B. Johnson	8,381	2,350	63	$75	1	0	0	7/1	1	307	172
Mary Fletcher Hospital *	Burlington, Vt.	A. B. Soule, Jr.	2,954	3,106	48	$50	1	0	0	7/1	1	172	68
University of Virginia Hospital *	Charlottesville	V. W. Archer	12,831	3,951	126	$37	1	1	0	7/1	3	336	138
Medical College of Virginia, Hospital Division *[1]	Richmond	F. B. Mandeville	10,033	2,990	103	$50	1	0	0	7/1	1	704	244
State of Wisconsin General Hospital *[1]	Madison	E. A. Pohle	33,634	10,579	363	$25	1	2	0	7/1	3	353	227
Columbia Hospital *	Milwaukee	S. A. Morton	2,281	289	25	$25	1	0	0	7/1	1-3	112	63

Numerical and other references will be found on page 784.

26. SURGERY

		Chief of Service	Hospitals Approved for Residency	Beds Open to Staff	Outpatient Visits	Beginning Residents	Residents Appointed	Assistants Appointed	Fellows Appointed	Service Begins	Length of Service (Years)	Deaths	Autopsies
Alliance Hospital *	Washington, Pa.	J. M. Hazen and D. S. Keener	1,793	100	12,139	950	2	0	0	7/1	1	145	94
Employees' Hospital of the Tennessee Coal, Iron and Railroad Company *	Fairfield, Ala.	L. Roland	1,007	..	13,245	9150	1	0	0	7/1	1	17	5
Angelus Rest Hospital *	Los Angeles	R. M. Schaefer	1,079	2	.....	3250	1	0	0	7/1	1	54	9
General Hospital of Fresno County *	Fresno, Calif.	F. H. Pettis	1,451	200	.....	965	1	0	0	7/1	1-3	197	67
Calvary of Lebanon Hospital *	Los Angeles	.....	1,581	25	3,444	875	1	0	0	7/1	1	73	30
Los Angeles County Hospital *	Los Angeles	G. Thomsonn	6,626	200	35,745	910	7	0	0	7/1&7/15	1+	728	250
White Memorial Hospital *	Los Angeles	G. Thomsonn	1,015	1	8,281	940	1	0	0	7/1	1-3	69	12
Alameda County Hospital *	Oakland, Calif.	L. P. Adams and C. A. Dewey	1,402	26	.....	940	1	1	0	7/1	1-2	122	37
San Bernardino County Charity Hosp.*	San Bernardino, Calif.	C. G. Hilliard	675	100	5,085	8100	1	0	0	7/1	1	71	34
San Diego County General Hospital *	San Diego, Calif.	M. C. Harding	1,050	100	.....	940	1	0	0	7/1	1	223	81
Hospital for Children *	San Francisco	A. Zilgens	350	6	2,139	925	0	1	0	7/1	1	12	4
Mary's Help Hospital *	San Francisco	R. Cortens	516	6	6,962	975	1	0	0	7/1	1	25	9
Mount San Rafael Hospital *	San Francisco	R. Reiner	1,277	50	5,710	950	1	0	0	6/15	1	39	17
St. Luke's Hospital *	San Francisco	M. Wertz	6,750	25	.....	8100	1	0	0	7/1	1	31	25
San Francisco Hospital *	San Francisco	R. Reiner and L. Brenner	1,495	100	.....	950	5	0	0	7/1	1	.....	.....
Stanford University Hospitals *	San Francisco	R. Reimer	1,500	2	16,726	975	1	0	0	7/1	1-2	58	32
University of California Hospital *	San Francisco	R. C. Lodtiger	1,258	2	16,107	975	1	0	0	7/1	1+	73	24
Santa Clara County Hospital *	San Jose, Calif.	R. K. Wilson	1,206	100	5,138	9150	1	0	0	7/1	1	.....	.....
Colorado General Hospital *	Denver	C. P. Reimer	795	37	4,659	975	1	0	0	7/1	1	55	44
St. Luke's Hospital	Denver	R. K. Finney	1,402	3	.....	950	1	0	0	7/1	1	56	30
Grace Hospital *	New Haven, Conn.	T. Russell	1,655	30	1,126	940	1	1	0	7/1	3	76	36
New Haven Hospital *	New Haven, Conn.	R. C. Harvey	2,405	17	16,256	*	1	0	0	1/1&7/1	1+	197	60
Memorial Hospital *	Wilmington, Del.	J. G. Speakman	1,246	94	56	8150	1	0	0	7/1	1-3	61	25
Central Dispensary and Emergency Hospital *	Washington, D. C.	J. P. Mitchell	3,549	32	3,149	945	1	2	0	6/15	1-3	69	22
Freedmen's Hospital *	Washington, D. C.	F. L. Rowes	1,116	85	8,251	*	1	4	0	7/1&10/1	1-2	79	21
Gallinger Municipal Hospital *	Washington, D. C.	C. S. White	1,596	59	9,641	935	1	2	0	7/1	1	132	51
Garfield Memorial Hospital *	Washington, D. C.	H. T. Carter	4,540	..	5,234	950	1	1	0	7/1	1-2	210	28
Georgetown University Hospital *	Washington, D. C.	J. A. Cahill	1,754	98	2,289	942	1	1	0	7/1	1-2	36	9
Providence Hospital *	Washington, D. C.	.....	1,258	35	14,499	975	1	1	0	7/1	1	85	50
Duval County Hospital *	Jacksonville, Fla.	R. Adler	974	100	.....	936	1	2	0	7/1	1	89	40
James M. Jackson Memorial Hospital *	Miami, Fla.	.....	6,734	46	.....	8108	1	0	0	7/1	1	231	61
Grady Hospital *	Atlanta, Ga.	.....	1,206	100	62,238	940	2	4	0	7/1	1+	219	80
St. Joseph Infirmary *	Atlanta, Ga.	G. P. Ringsley	1,206	10	3,693	875	2	0	0	7/1	1-2	68	32
University Hospital *	Augusta, Ga.	J. H. Sherman	1,679	39	5,949	940	1	2	0	7/1	1	154	24
Emory University Hospital *	Emory University, Ga.	D. C. Elkin	1,013	..	.....	950	1	1	0	7/1	1+	39	13
Augustana Hospital *	Chicago	C. M. Percy	1,053	14	.....	None	1	0	0	1/1	1	51	15
Cook County Hospital *	Chicago	M. Davison	13,547	100	21,225	925	22	0	0	1/1&7/1	1-3	209	250
Grant Hospital *	Chicago	.....	1,264	5	5,956	950	2	0	0	7/1	1-3	62	4
Mercy Hosp. Loyola University Clinics *	Chicago	L. D. Moorhead	1,756	38	2,825	950	1	0	0	7/1	2	43	17
Michael Reese Hospital *	Chicago	R. Strauss	1,402	63	9,146	950	2	0	0	1/1&7/1	1	97	54
Mount Sinai Hospital *	Chicago	V. L. Schwarz	1,404	35	6,258	930	1	0	0	7/1	1	22	8
Norwegian American Hospital *	Chicago	J. T. Fowler, Sr.	1,256	..	.....	925	1	0	0	7/1	1	23	10
Passavant Memorial Hospital *	Chicago	L. Travis	1,046	14	1,277	None	2	0	1	1/1&7/1	1	50	25
Presbyterian Hospital *	Chicago	V. Travis	2,300	12	.....	962	2	0	0	1/1	1-3	82	26
Provident Hospital *	Chicago	C. G. Roberts	1,758	62	17,655	950	1	0	2	9/1	1-5	69	41
Research and Educational Hospital *	Chicago	W. B. Cole	1,056	100	17,586	950	2	0	0	7/1&9/1	1-3	56	47
St. Joseph Hospital *	Chicago	H. McKenna	1,206	5	855	875	1	0	0	7/1	1	28	16
St. Luke's Hospital *	Chicago	H. E. Jones	1,005	7	8,705	925	2	0	0	7/1	1-3	78	60
University of Chicago Clinics *	Chicago	D. B. Phemister	1,500	96	16,661	975	1	4	6	1/1&7/1	1-5	71	54
Wesley Memorial Hospital *	Chicago	R. W. McNealy	2,325	15	222	935	2	0	0	7/1	1-2	47	23
Evanston Hospital *	Evanston, Ill.	P. Christopher	6,391	26	9,049	963	0	0	1	7/1	1-2	41	35
Methodist City Hospital *	Indianapolis	M. S. Bailey	1,405	50	5,301	941	2	0	0	7/1	1-2	60	25
Indiana University Medical Center *	Indianapolis	W. D. Gatch	1,256	89	5,502	933	2	2	0	7/1	1-3	61	34
Methodist Hospital *	Indianapolis	H. S. Leonard	3,488	5	.....	935	1	0	0	7/1	1-2	171	48
Iowa Methodist Hospital *	Iowa City	F. R. Peterson	3,134	87	5,456	921	1	6	0	7/1	1-6	151	97
University of Kansas Hospitals *	Kansas City, Kan.	T. G. Orr	2,129	56	9,378	950	1	2	0	7/1	1-4	61	33
St. Joseph's Hospital *	Lexington, Ky.	F. W. Rankin and W. O. Bullock	1,261	12	.....	935	1	1	0	7/1	1-2	82	41
Louisville City Hospital *	Louisville, Ky.	R. A. Griswold	1,401	98	20,247	914	15	1	0	7/1	1-4	159	61
St. Joseph Infirmary *	Louisville, Ky.	I. Atell, Sr.	4,154	14	.....	935	1	1	0	7/1	1-2	83	23
Charity Hospital *	New Orleans	C. Mass and A. Cetaser	12,212	100	49,856	925	2	19	0	7/1	1-4	508	163
Touro Infirmary *	New Orleans	L. H. Landry	8,693	85	12,974	935	1	1	0	7/1	1	121	72
Baltimore City Hospitals *	Baltimore	.....	2,987	92	.....	975	1	4	0	7/1	1	163	53
Bon Secours Hospital *	Baltimore	O. Stewart	929	12	501	975	1	2	0	7/1	4	47	13
Church Home and Infirmary *	Baltimore	T. S. Cullen	1,956	22	.....	930	1	3	0	7/1	2-4	54	29
Franklin Square Hospital *	Baltimore	E. R. Johnson	1,074	37	.....	935	1	2	0	7/1	1	25	10
Hospital for Women *	Baltimore	W. Reinhoff	537	18	3,248	950	1	2	0	7/1	1	13	5
Johns Hopkins Hospital *	Baltimore	A. McGehee	2,259	45	49,547	None	1	6	0	7/1&9/1	1-7	81	52
Maryland General Hospital *	Baltimore	R. P. Bay	2,395	33	4,412	935	3	2	0	7/1	1-4	97	15
Mercy Hospital *	Baltimore	W. D. Wise	2,196	35	5,564	950	1	4	0	9/1	3	72	29
Provident Hosp. and Free Dispensary *	Baltimore	O. C. Finney	650	72	737	945	2	0	0	10/15	1-4	54	12
St. Agnes' Hospital *	Baltimore	G. A. Stewart	3,507	31	7,260	None	1	2	0	7/1&10/1	1	92	23
St. Joseph's Hospital *	Baltimore	R. Nolan	1,277	50	5,855	910	2	2	0	7/1	3-4	69	13
Sinai Hospital *	Baltimore	A. Ullman	1,255	34	6,317	950	1	2	0	7/1	1-5	49	12
South Baltimore General Hospital *	Baltimore	C. Manson	1,114	41	5,902	930	1	3	0	7/1	1-4	50	10
Union Memorial Hospital *	Baltimore	J. M. T. Finney, Jr.	4,227	15	8,826	940	1	5	0	7/1	1-4	102	38
University Hospital *	Baltimore	A. M. Shipley	2,430	50	11,136	925	1	5	0	7/1	1-5	90	31
West Baltimore General Hospital *	Baltimore	R. C. Marvel	2,976	30	7,146	925	3	0	0	7/1	3	96	17
Beverly Hospital *	Beverly, Mass.	F. P. Johnson	1,263	2	752	975	1	0	0	Varies	1	47	31
Beth Israel Hospital *	Boston	C. G. Mixter	2,471	21	487	None	1	2	0	1/1&7/1	1-2	88	47
Boston City Hospital *	Boston	L. J. Walker	12,329	89	170,756	*	5	1	0	Varies	1+	572	105
Children's Hospital	Boston	W. E. Ladd	1,373	53	13,425	956	1	1	0	1/1&7/1	1	62	51
Faulkner Hospital	Boston	F. H. Lahey	2,500	...	...	8100	0	0	7	Quart.	1-3	84	59
Massachusetts General Hospital *	Boston	E. E. Churchill and A. W. Allen	6,886	48	30,670	942	2	2	0	1/1	1-3	81	38
Massachusetts Memorial Hospitals *	Boston	H. M. Clute	2,905	31	2,748	950	2	0	0	8/1	2	59	32
Peter Bent Brigham Hospital	Boston	E. C. Cutler	3,139	94	42,978	941	1	5	3	Quart.	1+	106	71
Cambridge Hospital *	Cambridge, Mass.	H. P. Stevens	1,200	11	4,840	861	1	0	0	1/1	1	.....	.....
Truesdale Hospital	Fall River, Mass.	F. E. Truesdale	1,483	19	.....	None	3	0	0	1/1&7/1	1	37	22
Memorial Hospital *	Worcester, Mass.	B. H. Alton	1,531	13	2,358	$100	1	0	0	8/1	1-2	37	21
Worcester City Hospital *	Worcester, Mass.	B. F. Andrews	3,474	62	.....	$75	1	0	0	1/1	1-2	219	59
University Hospital *	Ann Arbor, Mich.	F. Coller	3,841	74	16,439	$25	6	5	0	7/1	1-3	141	78
Alexander Blain Hospital	Detroit	A. W. Blain and I. G. Downer	813	..	.....	$75	3	0	0	7/1	1-3	22	12
City of Detroit Receiving Hospital *19	Detroit	C. F. Vale	5,150	666	44,871	$50	2	4	0	7/1	3-4	228	110

Numerical and other references will be found on page 784.

26. SURGERY—(Continued)

		Chief of Service	Inpatients Treated*	Per Cent Free*	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths*	Autopsies
Grace Hospital*	Detroit	C. S. Kennedy	5,258	31	6,570	$50	1	2	0	9/1	3	180	67
Harper Hospital*	Detroit	A. D. McAlpine	6,745	12	4,584	$45	1	6	0	1/1	3½	173	44
Henry Ford Hospital*	Detroit	L. W. Fallis	2,163	28	17,231	$130	1	11	0	7/1	1-5	70	37
Providence Hospital*	Detroit		5,237	10	.....	$100	1	2	0	7/1	1	113	27
Eloise Hospital and Infirmary*	Eloise, Mich	W. J. Seymour	2,415	99	337	$50	1	3	0	7/1	1-4	129	40
Hurley Hospital*	Flint, Mich	R. S. Morrish	1,346	25	.....	$42	3	0	0	7/1	1	51	22
Blodgett Memorial Hospital*	Grand Rapids, Mich	H. J. Vanden Berg	1,963	23	....	$100	1	0	0	7/1	1-2	35	19
Butterworth Hospital*	Grand Rapids, Mich	G. H. Southwick	3,901	10	.....	$90	1	0	0	7/1	1-2	126	44
St. Mary's Hospital*	Grand Rapids, Mich	O. H. Gillett	2,249	25	1,345	$100	1	1	0	7/1	2	130	49
Minneapolis General Hospital*1	Minneapolis	A. A. Zierold	2,457	86	13,019	$25	0	0	5	1/1&7/1	3-3½	199	112
University Hospitals*1	Minneapolis	O. H. Wangensteen	1,551	75	9,763	$50	1	2	4	1/1&7/1	3	100	82
Mayo Foundation	Rochester, Minn	(See page 784)											
Ancker Hospital*	St. Paul	V. R. Volwiler	1,607	98	4,838	$50	3	0	0	7/1	3	138	111
St. Louis County Hospital*	Clayton, Mo	F. W. Bailey	2,763	98	39,831	$50	1	3	0	7/1	1-2	111	75
Kansas City General Hospital*	Kansas City, Mo	B. A. Poorman	1,416	100	5,592	$50	2	0	0	7/1	1-3	98	76
St. Mary's Hospital*	Kansas City, Mo	M. J. Owens	1,470	16	.....	$50	1	0	0	7/1	1	48	28
Barnes Hospital*	St. Louis	E. A. Graham	4,474	9	17,508	$25	1	7	0	7/1	1-3	265	70
De Paul Hospital*	St. Louis	J. W. Thompson	1,555	24	770	$50	1	1	0	7/1	1-2	45	15
Homer G. Phillips Hospital*	St. Louis	R. Elman	2,097	100	11,247	$75	1	2	0	7/1	1-3	154	17
Jewish Hospital*	St. Louis	M. W. Myer	1,224	100	3,548	$35	1	1	0	7/1	1-5	44	17
Missouri Baptist Hospital*	St. Louis		.....	12	.....	$50	1	0	0	7/1	1	...	...
St. Louis City Hospital*	St. Louis	A. P. Rowlette	2,304	100	24,237	$50	3	7	0	7/1	1-3	271	113
St. Luke's Hospital*	St. Louis	E. V. Mastin	961	19	4,157	$50	0	1	0	7/1	1	88	41
St. Mary's Group of Hospitals*	St. Louis	L. Rassieur	2,500	39	10,580	$25	0	1	5	7/1	3	112	63
Creighton Memorial St. Joseph's Hosp.*	Omaha	C. McMartin	3,355	10	3,294	$50	1	0	0	7/1	1+	90	25
Cooper Hospital*	Camden, N. J	P. M. Mecray and I. E. Delbert	1,619	40	25,640	$83	1	0	0	12/1	3	98	26
Jersey City Hospital*	Jersey City, N. J		4,294	90	25,700	$100	1	2	0	10/1	2-3	219	36
Mountainside Hospital*	Montclair, N. J	V. B. Seidler	870	5	8,846	$100	1	0	0	7/1	1+	29	10
Burlington County Hospital*	Mount Holly, N. J	W. E. Lee	809	36	3,497	$100	1	0	0	7/1	1	47	19
Albany Hospital*1	Albany, N. Y	J. L. Donhauser	2,885	3	7,529	$25	1	3	0	7/1	1	94	60
Coney Island Hospital*	Brooklyn	D. A. McAteer	3,173	100	33,017	$100	1	1	0	7/1	1	125	29
Cumberland Hospital*	Brooklyn	M. N. Smyte	4,941	100	46,700	$100	1	1	0	7/1	1	99	31
Jewish Hospital*	Brooklyn	L. M. Davidoff	2,196	31	7,455	$25	1	3	0	8/1	3	108	55
Kings County Hospital*	Brooklyn	J. Tenopyr and R. Barber	14,357	100	49,105	$15	3	3	0	7/1	2	778	178
Long Island College Hospital*	Brooklyn	E. Goetsch	2,022	44	15,818	$22	1	3	0	7/1	5-6	66	22
Norwegian Lutheran Deaconesses' Home and Hospital*3	Brooklyn	L. Stork and D. Livingston	.....	1	21,194	None	1	1	0	7/1	2	67	24
St. Mary's Hospital*	Brooklyn	W. V. Pascual	2,267	22	11,494	$25	1	1	0	7/1	2	81	21
Buffalo General Hospital*	Buffalo	T. Wright	2,071	9	.....	$25	1	4	0	7/1	1	118	58
Deaconess Hospital*	Buffalo		3,428	2	466	$100	1	0	0	7/1	1	79	31
Edward J. Meyer Memorial Hospital (Buffalo City Hospital)*	Buffalo	H. A. Smith	1,796	85	6,552	$50	1	1	1	7/1	3-5	135	43
Millard Fillmore Hospital*	Buffalo	A. H. Clark	1,838	19	744	$25	1	1	0	7/1	1	69	23
Clifton Springs Sanitarium and Clinic	Clifton Springs, N. Y	A. S. Taylor	826	10	.....	$25	1	0	0	7/1	1-3	16	11
Mary Imogene Bassett Hospital*	Cooperstown, N. Y	M. A. Melver	691	5	.....	$125	1	0	0	1/1	1-2	35	20
Meadowbrook Hospital*	Hempstead, N. Y	C. A. Hettesheimer and A. S. Warlinner	2,804	90	206	$75	2	0	0	7/1	1-2	109	60
Mary Immaculate Hospital*	Jamaica, N. Y	F. N. Dealy	3,840	21	2,372	None	1	0	0	7/1	1	92	18
Queens General Hospital*1	Jamaica, N. Y	F. N. Dealy	3,996	100	19,330	$15	1	1	0	7/1	1	216	153
Charles S. Wilson Memorial Hospital*	Johnson City, N. Y	F. G. Moore	1,949	1	.....	$75	1	0	0	7/1	1-3	28	14
Bellevue Hospital*1	New York City		11,389	100	.....	Varies	64	0	0	1/1&7/1	2½	...	...
Flower-Fifth Avenue Hospital*	New York City	L. R. Kaufman and J. H. Fobes	3,281	5	12,616	$50	2	0	0	7/1	1	112	19
Harlem Hospital*1	New York City	L. Ginzburg	4,573	100	32,920	$15	1	1	0	1/1&7/1	1	314	31
Hospital for Ruptured and Crippled	New York City	C. G. Burdick	1,986	17	4,733	$30	1	3	0	Quart.	1	22	11
Lenox Hill Hospital*	New York City		1,859	35	7,676	$30	1	0	0	1/1	2	104	42
Metropolitan Hospital*1	New York City	J. H. Fobes	1,698	..	8,683	$100	2	0	0	7/1	1+	100	24
Montefiore Hosp. for Chronic Diseases*1	New York City	A. A. Berg	99	87	.....	$25	1	2	0	1/1&7/1	1	14	10
Mount Sinai Hospital*1,10,23	New York City		.....	55	.....	$125	4	3	0	1/1&7/1	1	...	...
New York City Hospital*	New York City	I. Kross	1,960	100	9,855	None	1	1	0	7/1	1	127	38
New York Hospital*	New York City	G. J. Heuer	4,912	5	5,401	$25	3	15	0	7/1	1-7	97	51
New York Infirmary for Women and Children*2	New York City	A. Hubert	1,143	35	13,654	$45	1	0	0	7/1	1	12	5
New York Polyclinic Medical School and Hospital*	New York City		1,690	12	10,492	None	8	0	0	Quart.	2	61	18
New York Post-Graduate Medical School and Hospital*	New York City	I. H. Russell	3,089	16	25,574	$30	3	16	0	Quart.	3-4	99	39
Presbyterian Hospital*1	New York City	A. O. Whipple	3,503	31	59,574	None	2	14	0	1/1&7/1	1-4	107	69
St. Luke's Hospital*	New York City	W. F. MacFee	2,047	41	17,282	$25	2	4	0	7/1	3	72	46
Genessee Hospital*	Rochester, N. Y	C. Sumner	2,769	..	5,015	$75	1	0	0	7/1	1	88	31
Rochester General Hospital*	Rochester, N. Y	H. L. Prince	1,222	10	7,485	$50	2	1	0	7/1	1	38	45
St. Mary's Hospital*	Rochester, N. Y	L. F. Simpson	3,181	20	3,190	$75	1	0	0	7/1	1	37	14
Strong Memorial and Rochester Municipal Hospital*	Rochester, N. Y	J. J. Morton	2,381	62	15,206	$42	1	5	0	7/1	1-4	102	106
Hospital of the Good Shepherd*	Syracuse, N. Y	A. G. Swift	3,498	2	.....	$83	1	1	0	7/1	1	108	42
Grasslands Hospital*	Valhalla, N. Y	G. C. Adie	652	91	4,522	$75	1	2	0	7/1	1-3	55	42
Duke Hospital*1	Durham, N. C	D. Hart	2,005	63	8,287	$42	1	8	0	7/1	3-4	95	54
Watts Hospital*	Durham, N. C	F. Roberson	1,781	24	6,973	$25	1	2	0	7/1	1	25	9
Rutherford Hospital	Rutherfordton, N. C	R. H. Crawford	887	18	4,608	None	1	0	0	7/1	1	2	0
City Hospital*	Winston-Salem, N. C		1,596	38	8,122	$50	2	2	0	7/1	2-3	69	23
Trinity Hospital*	Minot, N. D	A. L. Cameron	200	10	10	$35	1	0	0	7/1	3	12	10
City Hospital*	Akron, O		4,628	33	1,932	$35	1	3	0	7/1	1-3	192	91
St. Thomas Hospital*	Akron, O	A. F. Dorner	1,382	29	.....	$50	1	0	0	7/1	1	39	11
Mercy Hospital*	Canton, O	A. W. Warren	2,744	19		$100	1	0	0	7/1	1	100	33
Christ Hospital*	Cincinnati	R. A. Shank	1,959	13	2,143	$75	2	0	0	3/25	1	98	29
Cincinnati General Hospital*	Cincinnati	M. R. Reid	3,379	87	13,556	*	2	14	0	9/1	1-6	248	109
Deaconess Hospital*	Cincinnati	W. R. Griess	2,402	6	.....	$75	1	0	0	7/1	1	88	19
Good Samaritan Hospital*	Cincinnati	J. D. Miller	5,475	5	.....	$25	4	0	0	7/1	1-4	123	32
Jewish Hospital*	Cincinnati	J. L. Ransohoff	2,274	17	.....	$45	2	0	0	7/1	1-2	56	21
City Hospital*	Cleveland	C. H. Lenhart	2,445	92	14,247	$42	2	10	0	7/1	2	282	135
Cleveland Clinic Foundation Hospital	Cleveland	G. W. Crile	3,549	...	40,325	$56	6	0	9	7/1	1-3	124	61
Mount Sinai Hospital*1	Cleveland	M. E. Blahd	1,779	13	4,034	$60	2	0	0	7/1	1-2	64	25
St. Alexis Hospital*	Cleveland	J. F. Corrigan	5,858	35	11,873	$60	3	0	0	7/1	1-3	108	34
St. John's Hospital*	Cleveland	G. P. O'Malley	1,337	17	.....	$25	3	0	0	7/1	1-2	39	21
St. Luke's Hospital*	Cleveland	D. M. Glover	3,774	17	17,213	$25	1	3	0	6/25	4	129	34
St. Vincent Charity Hospital*	Cleveland	H. B. Wright	4,199	32	14,951	$50	1	3	0	7/1	1	131	57
University Hospitals*1	Cleveland	C. H. Lenhart	5,052	28	20,213	$25	4	4	2	7/1	2	152	75

Numerical and other references will be found on page 784.

26. SURGERY—(Continued)

	Chief of Service	Inpatients Treated[a]	Per Cent Free[4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents Fellowships		Service Begins	Length of Service (Years)	Deaths[a]	Autopsies
Starling-Loving University Hospital *[1]	Columbus, O.	V. A. Dodd	1,730	59	6,573	$25	1	3	0	7/1	1-5	107	61
Miami Valley Hospital *	Dayton, O.	A. T. Bowers	3,305	28	.....	$75	1	0	0	7/1	1	...	...
Huron Road Hospital *	East Cleveland, O.	H. L. Frost	1,917	9	2,272	$40	1	1	0	7/1	1-3	84	37
Lucas County General Hospital *	Toledo, O.	E. J. McCormick	1,734	100	14,602	$75	1	0	0	7/1	1	81	25
St. Elizabeth's Hospital *	Youngstown, O.	J. M. Ranz	3,626	8	.....	$50	1	1	0	7/1	1-2	92	12
St. Anthony Hospital *	Oklahoma City	R. M. Howard	4,285	8	.....	$50	1	1	0	7/1	1	111	21
State University and Crippled Children's Hospitals *	Oklahoma City	R. M. Howard	1,485	95	7,142	$50	2	0	0	7/1	2	107	55
University of Oregon Medical School Hospitals and Clinics *	Portland	T. M. Joyce	1,294	100	18,573	$30	1	2	0	7/1	3	142	90
Abington Memorial Hospital *	Abington, Pa.	D. B. Pfeiffer	1,761	13	4,431	$25	1	1	0	7/1	2	71	46
St. Luke's Hospital *	Bethlehem, Pa.	W. L. Estes, Jr.	2,305	48	745	$50	1	0	0	7/1	1	96	34
George F. Geisinger Memorial Hosp.*[13]	Danville, Pa.	H. L. Foss	2,133	41	10,795	$50	2	0	0	7/1	1-2	89	19
Germantown Dispensary and Hospital *	Philadelphia	.....	2,418	24	21,459	$130	1	0	0	7/1	1-2	58	17
Graduate Hospital of the University of Pennsylvania *	Philadelphia	W. E. Lee and W. Bates	1,301	61	21,878	None	2	0	0	7/1	2	76	28
Hahnemann Hospital *	Philadelphia	G. A. Van Lennep	3,201	52	12,037	$50	3	0	0	9/1	2	135	86
Jefferson Medical College Hospital *	Philadelphia	T. A. Shallow and G. P. Muller	2,899	77	13,549	$50	2	0	0	7/1	1-3	146	69
Jewish Hospital *[1]	Philadelphia	.....	3,144	27	4,928	None	1	0	0	6/15	1	125	67
Pennsylvania Hospital *	Philadelphia	W. E. Lee and J. B. Flick	1,754	26	28,190	$20	0	0	2	7/1&9/1	1-3	76	31
Philadelphia General Hospital *[1]	Philadelphia	.....	4,754	95	14,181	$150	1	0	1	7/1	1-2	...	...
Temple University Hospital *	Philadelphia	W. W. Babcock	1,499	43	2,181	$40	3	0	0	7/1	3	75	40
Woman's Hospital *[2]	Philadelphia	.....	808	46	4,537	$25	1	0	0	7/1	2	12	6
Allegheny General Hospital [4]	Pittsburgh	O. C. Gaub	2,230	51	14,302	$35	1	0	0	9/1	1	118	26
Children's Hospital	Pittsburgh	W. O. Sherman and E. W. Meredith	580	68	1,932	$35	1	0	0	9/1	1	9	2
Mercy Hospital *	Pittsburgh	J. P. Griffith	5,212	30	1,236	$50	1	0	0	9/1	1-3	...	...
Montefiore Hospital *	Pittsburgh	L. H. Landon	2,604	33	12,994	$50	1	0	0	9/1	1	51	27
St. Francis Hospital *	Pittsburgh	E. W. Meredith	2,482	30	2,656	$80	2	0	0	9/1	3	114	27
Reading Hospital *[13]	Reading, Pa.	W. A. Lebkicker	1,516	49	5,837	$83	1	0	0	7/1	1	107	61
Robert Packer Hospital *	Sayre, Pa.	D. Guthrie	2,115	55	6,567	$75	2	0	2	9/1	2	48	29
Roper Hospital *	Charleston, S. C.	R. S. Cathcart	1,774	51	9,956	$40	1	2	0	7/1	1-2	56	24
Baroness Erlanger Hospital *	Chattanooga, Tenn.	H. Laws, Jr.	4,322	57	16,000	$75	2	0	0	7/1	1	127	43
John Gaston Hospital *	Memphis, Tenn.	J. L. McGehee	1,749	95	11,080	$32	1	1	0	7/1	1	125	18
George W. Hubbard Hospital of Meharry Medical College *	Nashville, Tenn.	J. H. Hale	511	60	4,069	$75	1	0	0	7/1	2-3	61	17
Nashville General Hospital *	Nashville, Tenn.	L. W. Edwards	1,251	90	18,391	$25	1	2	0	7/1	1-2	75	30
Vanderbilt University Hospital *	Nashville, Tenn.	B. Brooks	2,559	..	25,857	$35	1	6	5	7/1	1	113	67
Baylor University Hospital *	Dallas, Tex.	C. B. Carter	4,499	15	2,755	$50	1	1	0	7/1	1	63	16
Parkland Hospital *[1]	Dallas, Tex.	L. Hudson	2,850	96	17,904	$10	4	0	0	1/1&7/1	1	175	61
John Sealy Hospital *	Galveston, Tex.	A. O. Singleton	1,663	73	18,824	$50	1	2	0	7/1	1	66	38
University of Virginia Hospital *	Charlottesville	E. P. Lehman	1,928	27	7,888	$83	1	5	1	7/1	1	87	36
Norfolk General Hospital *	Norfolk, Va.	.....	3,546	28	5,736	$50	1	0	0	7/1	1-2	53	14
Medical College of Virginia, Hospital Division *[1]	Richmond	I. A. Bigger	2,533	5	8,213	$25	2	3	0	7/1	1	147	54
Jefferson Hospital *	Roanoke, Va.	H. H. Trout	1,993	20	.....	$150	1	1	0	7/1	2	60	27
King County Hospital *[1,13]	Seattle	R. J. O'Shea	1,756	100	24,495	$125	1	0	0	7/1	1-2	105	55
Charleston General Hospital *	Charleston, W. Va.	J. E. Cannaday	1,843	10	1,397	$25	1	1	0	7/1	1-3	50	14
Laird Memorial Hospital	Montgomery, W. Va.	W. R. Laird	1,743	16	3,668	$100	1	2	0	7/1	1-3	45	4
State of Wisconsin General Hospital *[1]	Madison	E. R. Schmidt	1,888	84	2,362	$25	3	5	0	7/1	3	98	64
Columbia Hospital *	Milwaukee	W. L. Le Cron	2,321	1	.....	$100	1	0	0	7/1	2	37	25
Milwaukee Children's Hospital	Milwaukee	L. L. Anderson	2,060	63	12,122	$50	1	0	0	7/1	1	14	6
St. Joseph's Hospital *[1]	Milwaukee	F. A. Stratton	5,507	22	.....	$40	1	0	0	7/1	1	78	59
St. Mary's Hospital *	Milwaukee	W. C. F. Witte	3,890	18	.....	$90	1	0	0	7/1	1	63	16
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	J. M. King	4,890	98	25,844	$50	3	2	0	7/1	1	124	22

27. THORACIC SURGERY

Olive View Sanatorium [1]	Olive View, Calif.	E. S. Bennett and F. S. Dolley	274	86	.....	$75	1	0	0	Varies	1+	3	2
Norwich State Tuberculosis Sanatorium (Uncas-on-Thames)	Norwich, Conn.	R. G. Urquhart	262	..	.....	$150	1	0	0	7/1	1½	3	2
City of Chicago Municipal Tuberculosis Sanitarium	Chicago	R. M. Davison	210	100	.....	$100	1	1	0	1/1	1-2	5	...
Sanatorium Division of Boston City Hospital	Boston	H. Binney	159	100	.....	$150	1	0	0	Varies	1-2	5	0
University Hospital *[1]	Ann Arbor, Mich.	J. Alexander	593	74	1,319	....	0	0	6	7/1	2	22	13
Hudson County Tuberculosis Hospital	Jersey City, N. J.	F. Bortone	157	90	140	$100	1	0	0	9/1	1-2	6	2
Kings County Hospital *	Brooklyn	E. J. Grace	.....	100	115	$100	1	0	0	7/1	1	61	14
Mount Morris Tuberculosis Hospital	Mount Morris, N. Y.	E. F. Butler	117	95	.....	$135	1	0	0	7/1	1-2	3	2
Metropolitan Hospital *[1]	New York City	A. S. Thompson	128	....	1,746	$75	1	0	0	7/1	1+	13	2
Homer Folks Tuberculosis Hospital	Oneonta, N. Y.	J. Chamberlain	121	90	280	$100	0	1	0	7/1	1+	4	3
Sea View Hospital [1]	Staten Island, N. Y.	L. R. Davidson	368	..	.....	None	3	3	0	1/1&7/1	2	57	21
City Hospital *	Cleveland	C. H. Lenhart	.....	92	.....	$42	1	0	0	7/1	1	...	...
University of Oregon Medical School Hospitals and Clinics *	Portland	R. C. Matson	(New Unit)			$40	1	1	0	7/1	2	...	...
Muirdale Sanatorium	Wauwatosa, Wis.	A. L. Banyal	284	98	.....	$100	1	0	0	Varies	1-2	6	1

28. TRAUMATIC SURGERY

Morrisania City Hospital *	New York City	G. E. Milani	2,343	100	13 841	$15	1	1	0	1/1&7/1	1	113	26
Charleston General Hospital *	Charleston, W. Va.	H. A. Swart	935	10	4,633	$25	1	0	0	7/1	1-3	18	6

29. TUBERCULOSIS

Los Angeles Sanatorium	Duarte, Calif.	J. Rosenblatt	287	100	2,097	$75	2	0	0	Varies	1-4	35	10
Arroyo-Del Valle Sanatorium	Livermore, Calif.	H. C. Bush	545	100	797	$128[8]	1	0	0	7/1	1	9	6
Barlow Sanatorium	Los Angeles	H. W. Bosworth	169	7	1,390	$100	1	0	0	7/1	1	3	2
Los Angeles County Hospital *[1]	Los Angeles	C. Howson	999	100	4,162	$175	1	0	0	7/1	1	294	118
Pottenger Sanatorium and Clinic [1]	Monrovia, Calif.	F. M. Pottenger	254	1	3,810	$50	1	0	0	7/1	1	30	5
Bret Harte Sanatorium	Murphys, Calif.	E. P. Smart	345	97	206	$100	2	0	0	7/1	2	10	0
Olive View Sanatorium [1]	Olive View, Calif.	E. S. Bennett	1,479	86	.....	$75	2	0	0	Varies	1+	74	21
San Diego County General Hospital *	San Diego, Calif.	.....	156	100	.....	$40	1	1	0	7/1	3	56	21
San Francisco Hospital *[1]	San Francisco	S. J. Shipman and F. E. Pierson	764	100	.....	$50	5	0	0	7/1	1+	...	...
Santa Clara County Hospital *	San Jose, Calif.	C. C. Scarborough and C. Ianne	224	100	4,658	$125	2	0	0	7/1	1	22	8
Fairmont Hosp. of Alameda County [1,12]	San Leandro, Calif.	H. G. Trimble	438	100	575	$145	1	0	0	7/1	1	105	66
Denver General Hospital *	Denver	C. L. Lincoln	160	100	5,707	$50	1	0	0	7/1	1	52	24

Numerical and other references will be found on page 784.

29. TUBERCULOSIS—(Continued)

		Chief of Service	Inpatients Treated [2]	Per Cent Free [4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents	Fellowships	Service Begins	Length of Service (Years)	Deaths [5]	Autopsies
National Jewish Hospital	Denver	C. J. Kaufman	405	100	24	$75	5	0	0	Varies	3	24	11
Sanatorium of the Jewish Consumptives' Relief Society [1]	Spivak, Colo.	A. Rest	362	100	1,076	$100	5	0	0	Varies	3	26	12
Norwich State Tuberculosis Sanatorium (Uncas-on-Thames)	Norwich, Conn.	H. B. Campbell	386	..	.....	$150	1	0	0	1/15	2	61	14
Gaylord Farm Sanatorium	Wallingford, Conn.	D. R. Lyman	342	6	500	$100	2	0	0	Varies	1+	3	0
Tuberculosis Sanatorium (Glenn Dale, Md., P.O.)	Washington, D. C.	D. L. Finucane	538	4	.....	$150	3	0	0	7/1	1+	144	60
University of Chicago Clinics *	Chicago	R. G. Bloch	.....	36	1,018	None	1	1	0	1/1&7/1	1-2	8	6
Macon County Tuberculosis Sanatorium [1]	Decatur, Ill.	D. O. N. Lindberg	157	74	3,046	$100	1	0	0	1/1	1-3	4	2
Peoria Municipal Tuberculosis Sanit. [1]	Peoria, Ill.	M. Pollak	283	92	4,100	$125	2	0	0	7/1&9/1	1-2	20	10
Rockford Municipal Tuberculosis Sanat.	Rockford, Ill.	W. J. Bryan	261	100	8,448	$150	1	0	0	7/1	1-3	19	13
Boehne Tuberculosis Hospital [1,23]	Evansville, Ind.	P. D. Crimm	393	35	.....	$75	1	2	0	7/1	1-3	49	46
Sunnyside Sanatorium	Indianapolis	F. L. Jennings	172	80	822	$100	1	0	0	7/1	1	37	8
State Sanatorium	Oakdale, Ia.	J. H. Peck	307	...	794	$100	1	0	0	7/1	1+	62	42
Western Maine Sanatorium [1]	Greenwood Mountain	L. Adams	218	100	.....	$34	1	0	0	Varies	2+	32	14
Baltimore City Hospitals *	Baltimore	H. M. Stein	739	92	.....	$12	1	1	0	7/1	1	197	83
Sanatorium Division of Boston City Hospital	Boston	J. A. Foley	1,043	100	.....	$133	2	4	0	Varies	1-2	134	26
North Reading State Sanatorium [13]	North Wilmington, Mass.	C. C. McCorison	406	..	2,324	$150	1	0	0	Varies	1	13	1
Rutland State Sanatorium	Rutland, Mass.	F. B. Emerson	492	35	1,633	$75	1	0	0	Varies	1	66	29
Norfolk County Tuberculosis Hospital	South Braintree, Mass.	N. R. Pillsbury	273	97	2,015	$150	2	0	0	Varies	1-3	36	23
Middlesex County Sanatorium	Waltham, Mass.	H. D. Chadwick	660	..	15,293	$150	2	0	0	Varies	1	83	45
Belmont Hospital [1]	Worcester, Mass.	R. H. Baker	250	..	3,802	$133	2	0	0	Varies	1-3	38	19
University Hospital [21]	Ann Arbor, Mich.	J. Barnwell	.....	74	830	$25	1	1	0	7/1	1-3	16	14
American Legion Hospital	Battle Creek, Mich.	W. L. Howard	424	100	.....	$125	1	0	0	Varies	1+	36	9
Herman Kiefer Hospital	Detroit	E. J. O'Brien and B. H. Douglas	2,096	98	.....	$150	13	0	0	Varies	1+	277	98
Michigan State Sanatorium [1]	Howell, Mich.	G. L. Leslie	712	99	604	$125	3	0	0	7/1&8/1	1+	51	14
Ingham Sanatorium [1]	Lansing, Mich.	A. Swinger	278	5	1,982	$125	1	0	0	7/1	1-2	32	10
Morgan Heights Sanatorium [19]	Marquette, Mich.	R. F. Berry	215	70	200	$150	1	0	0	8/1	1-2	17	6
William H. Maybury Sanatorium	Northville, Mich.	H. S. Willis	1,419	..	.....	$150	3	0	0	Varies	1+	128	73
Oakland County Tuberculosis Hospital	Pontiac, Mich.	G. A. Sherman	398	65	.....	$150	3	0	0	7/1	1-2	33	14
Nopeming Sanatorium	Nopeming, Minn.	A. T. Laird	375	..	.....	$150	2	0	0	1/1	1-3	19	16
Glen Lake Sanatorium [1]	Oak Terrace, Minn.	E. S. Mariette	1,207	87	5,728	$10	1	0	0	Varies	1	117	86
Mississippi State Sanatorium [24]	Sanatorium, Miss.	H. Boswell	534	..	768	$100	1	0	0	7/1	1-3	46	6
Robert Koch Hospital	Koch, Mo.	G. D. Kettelkamp	807	100	.....	$100	2	5	0	7/1	1+	72	48
City Isolation Hospital	St. Louis	G. S. Bozalis	210	98	.....	$150	1	1	0	7/1	1	...	...
Homer G. Phillips Hospital *	St. Louis	D. Myers	241	100	484	$75	1	1	0	7/1	1-3	72	20
Mount St. Rose Sanatorium	St. Louis	L. C. Boislinière	201	45	.....	$150	1	0	0	7/1	2	42	19
New Jersey Sanatorium for Tuberculous Diseases	Glen Gardner	S. B. English	903	7	9,198	$83	8	0	0	Varies	1+	18	7
Hudson County Tuberculosis Hospital	Jersey City, N. J.	B. S. Pollak	899	90	10,918	$100	6	3	..	7/1	1+	158	47
Essex Mountain Sanatorium [22]	Verona, N. J.	B. M. Harman	879	99	1,702	$200	8	0	0	Varies	1+	174	39
Albany Hospital [41]	Albany, N. Y.	R. J. Erickson	199	3	1,784	$100	1	0	0	7/1	1	43	25
Montefiore Hospital Country Sanatorium	Bedford Hills, N. Y.	M. Pinner	308	94	.....	$100	3	0	0	Varies	1+	3	1
Kings County Hospital *	Brooklyn	C. E. Hamilton	205	100	9,022	$100	3	0	0	1/1&7/1	1	51	9
Kingston Avenue Hospital	Brooklyn	F. Murray	199	100	.....	$100	1	1	0	1/1&7/1	1	9	3
Edward J. Meyer Memorial Hospital (Buffalo City Hospital)*	Buffalo	D. K. Miller	514	85	4,807	$59	1	0	0	7/1	3	166	43
Hermann M. Biggs Memorial Hospital [1]	Ithaca, N. Y.	J. K. Deegan	416	77	5,431	$100	0	0	2	Varies	1	43	21
Mount Morris Tuberculosis Hospital	Mt. Morris, N. Y.	N. S. Lincoln	263	95	5,265	$100	1	0	0	7/1	1-2	25	18
Bellevue Hospital [41]	New York City	J. B. Amberson	2,541	100	.....	Varies	13*	0	0	1/1&7/1	2	...	...
Lenox Hill Hospital *	New York City	G. Thorburn	173	35	4,337	$25	1	0	0	7/1	1	6	2
Metropolitan Hospital [41]	New York City	G. G. Ornstein	771	..	1,728	$100	1	4	0	7/1	1+	200	35
Montefiore Hosp. for Chronic Diseases [41]	New York City	M. Pinner	423	87	.....	$25	1	2	0	1/1&7/1	1	60	42
Riverside Hospital	New York City	M. Taschman	809	100	.....	$100	5	0	0	7/1	1	213	37
Homer Folks Tuberculosis Hospital [1]	Oneonta, N. Y.	R. Horton	453	90	4,310	$137	2	1	0	7/1	1+	34	16
Municipal Sanatorium [1]	Otisville, N. Y.	J. Dworetzky	1,125	..	.....	$155	7	0	0	1/1&7/1	1-2	8	1
Iola-Monroe County Tuberculosis Sanat. [1]	Rochester, N. Y.	E. Bridge	697	93	11,818	$100	6	0	0	7/1	1-2	72	36
Sea View Hospital [1]	Staten Island, N. Y.	G. G. Ornstein	3,064	..	.....	$100	13	1	0	1/1&7/1	1	408	139
Trudeau Sanatorium	Trudeau, N. Y.	F. H. Heise	371	3	.....	None	0	2	3	Varies	1+	2	1
Grasslands Hospital *	Valhalla, N. Y.	W. G. Childress	274	91	5,312	Varies	3	3	0	1/1&7/1	1-3	87	56
Jefferson County Sanatorium	Watertown, N. Y.	S. E. Simpson	97	100	1,723	$100	1	0	0	7/1	1-3	10	6
North Dakota State Tuberculosis Sanatorium [1]	San Haven	C. Northrop	610	93	412	$75	1	0	0	10/1	1½	46	15
Hamilton County Tuberculosis Sanat. [1]	Cincinnati	E. E. Bishop	1,150	95	.....	$150	10	0	0	7/1	1+	154	63
City Hospital *	Cleveland	J. C. Pincak	1,269	92	4,766	$75	2	0	0	7/1	1	201	62
Franklin County Sanatorium [1]	Columbus	M. D. Miller	484	100	1,189	$125	3	0	0	7/1	1-3	56	25
Sunny Acres, Cleveland Tuberculosis Sanatorium [1]	Warrensville, O.	R. H. Browning	871	99	9,989	$166	3	3	0	7/1	1+	13	4
Eagleville Sanatorium for Consumptives [1]	Eagleville, Pa.	J. Cohen	344	89	6,328	$125	2	0	0	Varies	1	27	3
Germantown Dispensary and Hospital *	Philadelphia	F. M. McPhedran	54	24	2,636	$125	1	0	0	7/1	1	9	3
White Haven Sanatorium [1]	White Haven, Pa.	F. A. Craig	513	8	.....	$125	3	0	0	Varies	1+	64	19
State Sanatorium	Wallum Lake, R. I.	H. J. Connor	779	88	3,777	$150	9	0	0	Varies	1+	85	34
Pine Breeze Sanatorium	Chattanooga, Tenn.	A. Steward	461	93	1,220	$125	1	0	0	1/1	1-2	51	10
Davidson County Tuberculosis Hospital	Nashville, Tenn.	R. R. Crowe	595	100	3,921	$150	1	0	0	7/1	1-3	62	19
Woodmen of the World War Memorial Hospital	San Antonio, Tex.	C. J. Koerth	255	100	.....	Varies	2	0	0	11/1	1	18	10
King County Tuberculosis Hospital	Seattle	H. Kellogg	287	100	3,568	$100	1	0	0	7/1	1	42	22
Hopemont Sanitarium	Hopemont, W. Va.	A. V. Cadden	754	..	.....	$165	6	0	0	7/1	1+	42	17
Wisconsin State Sanatorium	Statesan, Wis.	H. M. Coon	346	87	.....	$200	3	0	0	Varies	1+	16	7
Muirdale Sanatorium [1]	Wauwatosa, Wis.	A. L. Banyai	780	98	4,832	$50	1	0	0	Varies	1-2	128	35

30. UROLOGY

Revision of list is now taking place in collaboration with the American Board of Urology

Hillman Hospital *	Birmingham, Ala.	W. F. Scott	424	100	62,599	$50	1	0	0	7/1	1	32	8
Los Angeles County Hospital [41]	Los Angeles	J. J. Crane	2,271	100	13,991	$10	6	0	0	4/1&10/1	3	160	71
White Memorial Hospital *	Los Angeles	R. W. Barnes	457	3	8,342	$80	1	0	0	7/1	1-3	15	7
San Francisco Hospital [41]	San Francisco	C. M. Johnson and J. R. Dillon	705	100	.....	$50	1	0	1	7/1	1	...	...
Stanford University Hospital *	San Francisco	J. R. Dillon	412	2	15,292	$25	0	1	0	7/1	1-2	13	5
University of California Hospital [41]	San Francisco	H. C. Naffziger	491	58	15,907	$25	1	0	0	7/1	1+	8	5
New Haven Hospital *	New Haven, Conn.	C. Deming	.....	37	2,975	[8]	1	0	0	7/1	1+	14	3
Gallinger Municipal Hospital *	Washington, D. C.	W. P. Herbst	618	99	.....	$25	1	2	0	7/1	1	72	47
Grady Hospital *	Atlanta, Ga.	.....	719	100	14,346	$40	2	3	0	7/1	1+	48	14
Michael Reese Hospital *	Chicago	A. E. Jones	509	43	2,773	$50	1	0	0	1/1	1-2	31	18
University of Chicago Clinics *	Chicago	C. B. Huggins	.....	36	4,564	None	0	1	2	7/1	1-2	10	7

Numerical and other references will be found on page 784.

30. UROLOGY—(Continued)

	Chief of Service	Inpatients Treated[3]	Per Cent Free[4]	Outpatient Visits	Beginning Salary	Residents	Assistant Residents Fellowships		Service Begins	Length of Service (Years)	Deaths[6]	Autopsies
Indianapolis City Hospital *[a]	Indianapolis	W. E. Tinney	452	95	6,211	$41	1	0	0	7/1	1-2	53	33
University Hospitals *[1]	Iowa City	N. G. Alcock	1,332	87	1,872	$21	1	0	0	7/1	1-6	80	40
Charity Hospital *	New Orleans	P. J. Kahle and J. G. Pratt	3,293	100	22,841	$25	3	3	0	7/1	1-3	140	82
Touro Infirmary *[1]	New Orleans	E. Vickery	.....	35	6,200	$25	1	0	0	7/1	1	...	...
Johns Hopkins Hospital *	Baltimore	H. H. Young	901	45	7,520	None	1	2	0	7/1&9/1	1-4	87	28
Beth Israel Hospital *	Boston	E. G. Crabtree	309	21	320	$30	1	0	0	7/1	2	...	...
Boston City Hospital *[1]	Boston	H. H. Howard	673	89	37,580	$50	1	1	0	Varies	1+	55	21
Lahey Clinic	Boston	E. E. Ewert	.....	...	6,000	$100[c]	0	0	1	...	1-3	...	...
Massachusetts General Hospital *	Boston	G. G. Smith	680	48	18,479	$42	1	0	0	Quart.	2	26	14
Massachusetts Memorial Hospitals *	Boston	S. N. Vose	375	31	4,270	...	1	0	0	7/1	1	12	6
University Hospital *[1]	Ann Arbor, Mich.	R. M. Nesbit	1,566	74	11,413	$25	1	2	0	7/1	1-5	47	26
City of Detroit Receiving Hospital *[1,2,13]	Detroit	H. W. Plaggemeyer and W. E. Keane	1,125	100	6,086	$83	1	1	0	7/1	1-2	36	27
Harper Hospital *	Detroit	F. H. Cole	510	12	2,149	$45	0	1	0	7/1	1	13	3
Henry Ford Hospital *	Detroit	J. K. Ormond	351	28	10,465	$130[c]	1	1	0	7/1	3	2	1
Eloise Hospital and Infirmary *	Eloise, Mich.	W. L. Sherman	671	99	286	$83	1	1	0	7/1	1	40	12
University Hospitals *[1]	Minneapolis, Minn.	C. D. Creevy	556	75	4,275	$50	0	0	2	1/1&7/1	3	37	25
Mayo Foundation	Rochester, Minn.	(See data below)											
Ancker Hospital *	St. Paul	F. E. V. Foley	358	98	3,642	$50	1	0	0	6/1	1	35	26
Kansas City General Hospital *	Kansas City, Mo.	R. L. Hoffman	542	100	2,217	$50	1	0	0	7/1	1-2	29	18
St. Louis City Hospital *	St. Louis	J. F. Patton	852	100	4,408	$50	1	0	0	7/1	1	57	28
St. Mary's Group of Hospitals *	St. Louis	C. F. Burford	520	99	4,139	$25	0	0	1	7/1	3	13	8
Atlantic City Hospital *	Atlantic City, N. J.	C. H. deT. Shivers	357	72	17,808	None	1	0	0	7/1	2	2	2
Bayonne Hospital and Dispensary *	Bayonne, N. J.	S. R. Woodruff	476	68	848	None	1	0	0	7/1	1	7	3
Jersey City Hospital *	Jersey City, N. J.	.....	658	90	17,275	$75	1	1	0	1/1&7/1	1	54	7
Newark City Hospital *	Newark, N. J.	C. O'Crowley	686	100	.....	$20	1	0	0	7/1	1	...	...
Albany Hospital *	Albany, N. Y.	J. E. Heuer	603	3	2,541	$25	0	1	0	7/1	1	15	10
Kings County Hospital *	Brooklyn	C. S. Cochrane	2,114	100	4,839	$15	1	1	0	7/1	2	200	21
Long Island College Hospital *	Brooklyn	F. L. Senger	475	44	8,809	$22	1	1	0	7/1	2	17	7
Buffalo General Hospital *	Buffalo	F. J. Parmenter	629	9	.....	$25	0	1	0	7/1	1	26	10
Edward J. Meyer Memorial Hospital (Buffalo City Hospital) *	Buffalo	F. J. Parmenter	263	85	7,706	$30	1	0	0	7/1	3	38	7
Queens General Hospital *[1,24]	Jamaica, N. Y.	F. G. Riley	767	100	6,888	$15	1	1	0	7/1	1	54	14
Bellevue Hospital *[1]	New York City	A. R. Stevens	1,599	100	.....	Varies	2[e]	0	0	1/1&7/1	2	...	...
Morrisania City Hospital *	New York City	T. Townsend	710	100	4,328	$15	1	3	0	1/1&7/1	2	24	16
New York City Hospital *	New York City	T. J. Kirwin	401	100	1,385	$100	1	0	0	7/1	1-2	30	16
New York Hospital *	New York City	O. Lawsley and A. Stevens	418	5	902	None	2	2	0	7/1	1-6	40	16
New York Post-Graduate Medical School and Hospital *	New York City	J. A. Hyams	392	16	9,517	$30	1	0	0	7/1	1	17	3
Presbyterian Hospital *[1]	New York City	J. B. Squier	1,207	31	10,976	$42	1	5	0	1/1&7/1	3	52	11
Roosevelt Hospital *	New York City	S. A. Beisler	441	9	6,773	None	1	1	0	Varies	1-2	11	5
St. Luke's Hospital *	New York City	H. G. Bugbee	197	41	3,758	$25	1	0	0	7/1	2	14	7
Strong Memorial and Rochester Municipal Hospitals *	Rochester, N. Y.	W. W. Scott	721	62	7,521	$42	1	1	0	7/1	4	...	...
Sea View Hospital [1]	Staten Island, N. Y.	A. J. Greenberger	299	..	.....	None	1	1	0	7/1	1	11	4
Duke Hospital *[1]	Durham, N. C.	E. P. Alyea	672	63	4,599	$42	1	1	0	7/1	3-4	17	7
Watts Hospital *	Durham, N. C.	W. M. Coppridge	348	24	6,973	$50	1	0	0	7/1	1	2	0
City Hospital *	Cleveland	H. Trattner	295	92	7,234	$42	1	0	0	7/1	1	...	...
Cleveland Clinic Foundation Hospital	Cleveland	W. E. Lower	699	...	11,949	$56	0	0	4	7/1	1-3	23	7
University Hospitals *[1]	Cleveland	J. J. Joelson	723	28	10,057	$30	1	0	0	7/1	2	18	7
Starling-Loving University Hospital *	Columbus, O.	W. N. Taylor	367	59	3,826	$25	1	1	0	7/1	1-2	23	21
University of Oregon Medical School Hospitals and Clinics *	Portland	J. G. Strohm	262	100	9,371	$40	1	0	0	7/1	1	42	20
Graduate Hospital of the University of Pennsylvania *	Philadelphia	J. C. Birdsall and W. Mackinney	210	61	13,037	None	1	0	0	7/1	1	6	1
Hospital of the University of Pennsylvania *[1]	Philadelphia	A. Randall	392	97	3,876	None	1	0	0	9/1	3	6	5
Pennsylvania Hospital *	Philadelphia	L. Herman	433	26	6,665	$30	0	0	2	7/1&9/1	1-2	20	3
Presbyterian Hospital *	Philadelphia	J. C. Birdsall	229	9	10,616	None	1	0	0	6/1	1+	15	13
Mercy Hospital *	Pittsburgh	E. J. McCague	495	30	279	$25	0	0	1	7/1	3	17	11
Parkland Hospital *	Dallas, Tex.	A. L. Folsom	396	95	3,019	$10	1	0	0	7/1	2	30	19
University of Virginia Hospital *	Charlottesville	S. A. Vest	483	27	3,206	[a]	1	1	0	7/1	1	17	4
State of Wisconsin General Hospital *[1]	Madison	I. R. Sisk	664	84	98	$25	1	1	0	7/1	3	39	25
Milwaukee County Hospital *[1]	Wauwatosa, Wis.	R. S. Irwin	528	98	16,072	$50	2	0	0	7/1	1+	34	20

Mayo Foundation Fellowships—The Mayo Foundation for Medical Education and Research, Rochester, Minnesota; D. C. Balfour, director; three-year fellowships, beginning quarterly, leading to the degree of M.S. or Ph.D. with field named from the University of Minnesota: in Anesthesia, Dermatology and Syphilology, Internal Medicine, Neurology and Psychiatry, Neurosurgery, Obstetrics and Gynecology, Ophthalmology, Orthopedic Surgery, Otolaryngology, Pathology, Pediatrics, Physical Medicine, Plastic Surgery, Proctology, Radiology, Surgery, Urology; stipend $900 per year, (clinical fellowships including pathology and radiology—$78).

a. Compensation arranged by medical school and hospital.
b. Represents number of patients.
c. In lieu of maintenance.
d. Outpatient and home delivery service only.
e. Hospital facilities by affiliation.
f. Resident selected and paid by Otho S. A. Sprague Memorial Institute.
g. Includes residencies, assistant residencies and straight internships following previous intern training.
h. Includes ophthalmologic patients.
j. Includes otolaryngologic patients.
k. Includes two fellowships in gastroenterology.
m. Includes four one-year fellowships in gastroenterology.
1. Residencies open to women.
2. Residencies for women only.
3. Inpatients: Numbers refer to total inpatients treated in specialty. Obstetrical admissions do not include newborns. In pathology and anesthesiology total hospital admissions are used.
4. The percentage of free patients refers to the entire hospital service.
5. Deaths and autopsies are reported for individual specialties. In obstetrics only maternal deaths are included; in anesthesiology, pathology and radiology all hospital deaths are listed exclusive of stillbirths.
6. Chicago Lying-in Hospital and Dispensary, Chicago.
7. Hospital service confined to drug addicts.
8. Palmer Memorial Unit.
9. Includes neurosurgery.
10. Address all applications to superintendent.
11. Maternity service at Herman Kiefer Hospital.
12. Includes neurology.
13. Hospital appoints residents from its own house staff.
14. Includes orthopedics.
15. Includes obstetrics.
16. Applications will be considered only from men who have had a previous year's training in some recognized pathological laboratory.
17. Apply to chief of service for information about affiliating hospitals.
18. Includes proctology.
19. Admissions confined to children.
20. Separate appointments approved in roentgenology and radium therapy.
21. Several services include obstetrics-gynecology.
22. Includes thoracic surgery.
23. Private and semi-private pavilions.
24. Includes dermatology.
25. Dental as well as medical degree required.
26. Includes gynecology.
27. Two residents serve six months on obstetrics.
28. Includes x-ray and radium therapy.
29. Affiliated with Free Hospital for Women, Brookline, Mass.
30. Affiliated with Bishop De Goesbriand Hospital, Burlington, and Fanny Allen Hospital, Winooski.
31. Mixed residencies represent general hospital experience of at least one year's duration following an approved internship. All hospitals approved for intern training are also certified for general or mixed residencies.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 31, 1940

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of the federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.

2. The allotment of such funds as the Congress may make available to any state in actual need, for the prevention of disease, the promotion of health and the care of the sick on proof of such need.

3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.

5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.

6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.

7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.

8. Expansion of public health and medical services consistent with the American system of democracy.

INTERNSHIPS

The internship is an established institution in this country, mutually profitable to both hospitals and interns. Each year more hospitals seek the privilege of instructing interns. Even in those states in which an internship is not legally required for licensure, practically all medical graduates voluntarily serve this form of apprenticeship. The merits of "straight," "mixed" and "rotating" internships are still debated; probably all of these types are desirable and no one of them should be adopted to the exclusion of others.

Elsewhere in this issue Dr. William Dock [1] discusses the selection of interns and argues that medical students should secure intern appointments largely through their own efforts rather than through the agency of the dean or intern committee. Dr. Dock points out that assumption of responsibility for placing its graduates or fifth year students by the school incurs an obligation to those hospitals which benevolently accept candidates who rank among the lowest in their class. Having recommended such a man in the fall of his final year, the faculty would scarcely dare to flunk him in June. A fortiori, medical schools should not make the internship a part of their requirement for a degree. Although twenty-five years has elapsed since such a requirement was first adopted at Minnesota, only 17 per cent [2] of the schools now make an internship obligatory. Certainly it cannot be said that there is any trend toward the inclusion of the internship in the undergraduate medical course.

In order to raise the standards of medical practice and, more particularly, to increase the educational value of internships the universities should, according to Dr. Dock, first clean their own house and raise the quality of the services in the hospitals which they control by inaugurating a more stringent selection of interns and residents and by opening these opportunities to wider competition. He deplores the inbreeding which now too often prevails. In conclusion he states that, "As long as the university attempts to guide or assist the student, this freedom of choice is restricted and the result is harmful to students and to medical schools."

1. Dock, William: Responsibility for Choosing Interns and Internships, this issue, p. 657.

VITAMIN DEFICIENCY AND MYONEURAL RESISTANCE

According to experimental data currently reported by Sabin and Duffy [1] of the Children's Hospital, University of Cincinnati, dietary deficiencies in nursing mothers may retard the development of effective constitutional barriers against virus infections in nursing young, even though there is no retardation of normal growth or weight.

About four years ago it was shown by Olitsky and his co-workers [2] of the Rockefeller Institute that in growing mice there is an acquired resistance to viruses not associated with the presence or absence of humoral antibodies. This was shown in its most striking form on injection of massive doses of the virus of vesicular stomatitis. In mice 2 weeks of age, injected intramuscularly, almost 100 per cent develop fatal paralyses. With 3 week mice there are 85 per cent of fatalities, decreasing to about 15 per cent of mortality by the fourth week. Mice over 6 weeks of age are 100 per cent resistant to this type of injection. No maturation immunity is demonstrable on intracerebral injection, and there are no demonstrable virucidal antibodies. Maturation resistance is apparently due to development of an effective constitutional barrier at the myoneural junction.

Determination of the effect of nutritional factors on this myoneural maturation was attempted by the Cincinnati pediatricians. Because mice continue to suckle their young for about twenty-eight days, Sabin and his

2. Three schools have recently discarded the intern requirement.

1. Sabin, Albert B., and Duffy, Carl E.: Science **91**: 552 (June 7) 1940.

2. Olitsky, P. K.; Sabin, A. B., and Cox, H. R.: J. Exper. Med. **64**: 723 (Nov.) 1936.

colleagues first studied the effect of nutritional deficiencies in nursing mothers. Female mice were maintained on an "adequate" diet throughout pregnancy and for two days after delivery. On the second day, groups of these nursing mothers were placed on vitamin deficient diets. The breast fed young were tested at various age levels for the efficiency of their myoneural virus defense.

Control groups in which "adequate" maternal diet was continued during the twenty-eight day nursing period showed a normal development of myoneural resistance. With maternal diets deficient in vitamin E or in certain components of the vitamin B complex there was a definite retardation in the normal development of the myoneural barrier. The greatest retardation was noted in groups of sucklings in which the maternal diet had been partially denatured by overcooking (autoclaving).

In their second method of study the young of nursing mothers on adequate diets were weaned on the fourteenth day and placed on various deficiency rations. Control young placed on adequate rations made a good gain in weight and showed a normal development of virus resistance. With vitamin deficient rations, however, the young might have a normal increase in size or weight, but without exception they showed a well marked retardation in development of the myoneural defense.

In 6 week mice reared on adequate diets it has not yet proved possible to break down the matured virus barrier by subsequent vitamin deficiencies. The virus barrier remains wholly effective even after these mice have developed signs of advanced vitamin B_1, E or riboflavin deficiency.

THE NON COMPOS MENTIS TREATMENT OF APPENDICITIS

A recent issue of an extraordinary publication called the *Journal of Drugless Physicians* contains an article entitled "Appendicitis and Its Cure" by one Richard Van Rumpt, PH.C. (what is a PH.C.?), of New York City. "In this treatise," he begins, "we will not discuss causes, pathology and theories. We will discuss the Chiropractic and other manipulative treatment." He then disregards pathology entirely and suggests a manipulative treatment for a serious surgical condition, saying:

> The methods to be described will be for acute appendicitis only. By "acute" we mean a typical case, with fever, pain, high white blood count, etc. Let us proceed. We are called to the bedside of a patient suffering with an unmistakable attack of acute appendicitis. The first thing we do after making our thorough physical, laboratory and Chiropractic examination, is to test the Vagus nerve against the appendiceal pain to see if the pain is of vagus origin. . . .
>
> . . . Pressure at the atlas axis area slows down and inhibits the Vagus, which is stimulatory below the diaphragm and also influences the spinal accessory, which is motor to the Vagus nerve. This atlas axis pressure is held until the appendiceal pain clears—from one to three minutes. If after three minutes of pressure the appendix pain remains, it is proof sufficient that this particular case of appendicitis is not of Vagus origin.

Evidently at this point the weirdness of the author's notions caught up with him and he began to mistrust himself. So he continues:

> Some might argue, why not adjust the atlas or axis instead of just using inhibition? I do not object to adjusting this area if you so prefer, providing your adjustment is more inhibitory than stimulatory. I sincerely believe that by using the Vagus inhibitory technic as described, you will be taking less of a chance.

Having thus disposed of risk in his own mind, Van Rumpt, PH.C., offers an alternative:

> Preferred method number two in the treatment of appendicitis is the localizing method, a la DeJarnette. This method is used whenever there is a direct spinal nerve involvement. Your writer is well aware of the fact that the spinal nerves do not directly supply the appendix with nerve supply. Your writer also knows that the pain of appendicitis is not felt in the appendix itself, but rather in the tissues overlying the appendix, which tissues are supplied by the spinal nerve.

His scientific status now becomes wholly clear. With startling nonchalance he exploits his ignorance:

> A special effort is being made in the writing of this article to avoid anatomy, pathology, etc., and keep it therapeutically Chiropractic.

In this avoidance of anatomy, pathology, etc., particularly etc., he is completely successful. The author admits, however, that

> The localizing method of treating appendicitis will only work when the engorgement at the appendiceal region has referredly caused an engorgement to exist within the nerve sheath at the 2nd lumbar nerve. We mention the 2nd lumbar nerve specifically because we of the Sacro Occipital Research Society have found that we persistently find this engorgement in all cases of appendicitis with direct spinal nerve involvement. We proceed as follows. . . . The patient's head is turned slightly to take out the slack, similar to giving a cervical break [whether a "cervical break" is to be preferred to appendicitis has not been determined.—ED.] or rotation adjustment. In adjusting the occiput care must be taken that the chin is not rotated with the neck. [This sounds like a dislocated jaw.—ED.] In other words, the chin must face straight up to the ceiling. When all the cervical slack is taken up and the chin facing the ceiling, a thrust is given directly on the occipital area that controlled all inferior pain.

Perhaps at this point the patient becomes unconscious or if still conscious leaves the table—the chiropractic table. But if he stays he finds out he is only beginning: . . . "Adjusting the occiput in acute appendicitis, or any other acute pain, will do no good unless it is the lesion that is causing the acute pain," says Van Rumpt, PH.C. But there is also a third method: "Place patient on the left side and bend the right knee onto the abdomen. . . . The technic, after proper contacts are made, is to pull the 2nd lumbar contact toward the operator while pushing the shoulder away from operator. When the contacts and thrusts are properly made, the characteristic Chiropractic pop will be heard." Perhaps the pop is the appendix rupturing! But this method is to be used only "if and when the two previous methods fail." And now Van Rumpt, PH.C., plays his ace: "Your writer strongly suggests that if the three methods described above fail to control the appendiceal pain, *you call a surgeon at once* [italics ours.—ED.]. Your writer knows of other methods that

could be used, possibly successfully, but prefers not to use them or discuss them here, for safety's sake." Congratulations, Van Rumpt, PH.C., on calling a surgeon! We only hope it is not too late!!

Current Comment

LIFE AND OSTEOPATHY

In *Life*, which is a picture magazine, for August 19 appears an article entitled "Osteopathy's 'Cure-By-Manipulation' Is Attacked by Regular Physicians." Here a small amount of text is supplemented by a number of photographs, evidently made in or supplied through the osteopathic shrine at Kirksville, Mo., known as the Kirksville College of Osteopathy and Surgery. In the very brief text which accompanies the pictures appear a number of misstatements of fact which, it is not too confidently expected, the magazine may correct. Many of these misrepresentations have been repeatedly exposed in THE JOURNAL. In the second paragraph of the article, for example, appears this statement:

> In 33 States qualified doctors of osteopathy are permitted to practice on equal or almost equal footing with doctors of medicine. Osteopaths can and do deliver babies, perform surgery, prescribe drugs and take full charge of patients.

The facts are that in only four states (Colorado, Massachusetts, New Hampshire and Texas) for certain, and perhaps in a fifth (Kentucky), may osteopaths now legally prescribe or dispense drugs without restriction. This is true in the first four states mentioned because in those states osteopathic applicants, if licensed at all, must meet the requirements exacted of applicants to practice medicine generally. To this list may be added, after Nov. 1, 1941, a sixth state (New Jersey), where osteopaths licensed after that date will be subject to the same requirements as nonsectarian applicants and will receive an unlimited license to practice medicine. Experience has shown that few osteopaths indeed are able to meet the requirements exacted of applicants to practice medicine generally. In twelve states osteopaths are given limited right to use certain drugs, the drugs concerned varying in the various states. In eight states osteopathic licentiates generally may not use drugs, but the laws contain provisions whereby osteopaths may, under certain conditions, obtain licenses by virtue of which they may use drugs, the law of one of these states even then permitting the use only of a very limited number of drugs. In eight states osteopaths are specifically denied the right to use drugs. In nine states osteopaths secure licenses only to practice osteopathy, without defining the scope of the practice permitted, but no court has ever held that the right to practice osteopathy includes the right to use drugs. In seven states osteopaths are licensed to practice osteopathy as taught in recognized schools of osteopathy which, in effect, denies them the use of drugs, and the Supreme Court of Kansas has recently held that the right to practice osteopathy as taught and practiced in recognized schools of osteopathy confers no right on osteopaths to practice operative surgery or to use remedial drugs. To summarize: In twenty-four states osteopaths legally cannot under any circumstances use drugs. In eight states by far the greatest number of osteopaths cannot use drugs but it is possible for candidates possessing stated qualifications to obtain that right. In twelve states osteopaths may utilize stated drugs to a limited extent. Only in five states, probably, may osteopaths use drugs without restriction. Obviously, then, from the standpoint of the right to use drugs, which an osteopath must possess if he is "to practice on equal or almost equal footing with doctors of medicine," the article in *Life* is, to put it charitably, indulging in gross exaggeration when it states "In 33 States qualified doctors of osteopathy are permitted to practice on equal or almost equal footing with doctors of medicine."

RESIDENCIES

Institutional apprenticeships in the form of residencies in special fields of medicine, instituted at the Johns Hopkins Hospital in 1889, were but slowly adopted by other institutions. The first list of available residencies published by the Council nearly forty years later included the names of 278 hospitals and 1,776 residencies. In recent years, however, the number of institutions offering this type of service has increased with surprising rapidity. Currently there are 587 hospitals employing 5,118 physicians as residents in specialties. Two factors at least have contributed to this growth; namely, the creation of examining boards in the specialties which require of their candidates training and experience most readily secured in a hospital, and the more and more widespread recognition on the part of hospital staffs that the welfare of patients is enhanced by the presence in the hospital of house officers having greater maturity of judgment and a higher degree of technical skill than can be expected of interns less than one year out of medical school. Growing pains almost inevitably accompany such rapid development. There are not wanting indications that the residency is not yet fully adjusted to its surroundings. In the *New England Journal of Medicine* for June 20 an editorial comments on the financial and educational responsibilities assumed by the hospital embarking on a program of residency training. No doubt the cost for salaries and maintenance is compensated by the advantages which accrue to the hospital. The formulation and execution of a suitable educational program for residents makes demands by no means negligible on the time and energy of the attending staff. The hospital, however, should not assume obligations which it is unable to fulfil and must be content to make that contribution to graduate medical education which its resources, financial, clinical and personal, permit. The candidate who desires five years of training, let us say, in surgery need not necessarily spend the whole time in a single institution. Sometimes he may, with the utmost profit, migrate through several institutions each of which offers something of special value to him. In the appraisal of educational opportunities the time element should never be the sole criterion. It may even be the least important. The content of the program, the methods of instruction, professional standards and the personnel of the staff are the significant factors in evaluating a resident service.

MEDICAL PREPAREDNESS

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.

MEDICAL PREPAREDNESS IN PHILADELPHIA

A course for civilian physicians on "Medical Preparedness in the Present National Emergency" will be given by the Philadelphia County Medical Society at the Society Building, Twenty-First and Spruce streets.

The course will be sponsored also by the following participating organizations:

The Homeopathic Medical Society of the County of Philadelphia.

The Philadelphia County Dental Society.

The Keystone Veterinary Medical Association.

The W. W. Keen Chapter, Association of Military Surgeons of the United States.

It will be in charge of the Committee on National Defense of the Philadelphia County Medical Society and representatives from the other participating organizations.

The first meeting will be held September 10 at 9 p. m., when the following program will be presented:

"The Military Policy of the United States," by Major Russell B. Reynolds, Infantry, U. S. Army.

"The Doctor in the Army," by Lieut. Col. John M. Welch, Medical Corps, U. S. Army.

"The Doctor in the Navy," by Captain John B. Kauffman, Medical Corps, U. S. Navy.

The other meetings will be held weekly on Thursday afternoons from 4:30 to 6 o'clock, beginning September 19 and continuing for several months.

The program for the first afternoon meeting on September 19 will be as follows:

"The Selective Service Act and the Physician."

"The Contemplated Selective Service Act—Machinery and Operation," by Lieutenant Colonel Nicholas K. Biddle, Pennsylvania National Guard.

The following will be the program for the meeting on September 26:

"Noncombatant Military Hospitals and Medical Installations—Civilian Institution Sponsored Hospitals of the Army" (speaker to be announced).

VOLUNTEER SURGICAL UNIT GOES TO ENGLAND

A group of five orthopedic surgeons, a plastic surgeon and a general surgeon under the direction of Dr. Philip D. Wilson, chief surgeon of the Hospital for Ruptured and Crippled, New York, sailed for England August 22 to give their services to British war victims, the New York *Times* reports.

The group, which also included three surgical nurses, a medical artist and a secretary, is sponsored by the Allied Relief Fund, which is campaigning for medical and civilian relief for England. According to the *Times*, Dr. Wilson formed the American Hospital in Britain, Ltd., last May after hearing that American medical assistance would be welcomed. Members of this first unit have volunteered for six months' service, an office will be maintained in New York for servicing the unit and selecting staff replacements. Sufficient equipment to enable the unit to operate independently of British aid for several months was placed aboard the ship.

In addition to Dr. Wilson, the unit included Drs. Donald E. Dial, Frederick William Waknitz, John M. Converse, all of New York; Charles Hickling Bradford, Boston; William Richard Ferguson, Baltimore, and Norman Egel, Rochester, N. Y.; Misses Miriam L. Knight, Adelbert Ethel Overman and Mildred Lillian Lewis, Mrs. Sheila M. Converse and Mrs. Helen Darcy Dial, New York.

TERRITORIAL COMMITTEE ON MEDICAL PREPAREDNESS

The Puerto Rico Medical Association appointed its Territorial Committee on Medical Preparedness to work in cooperation with the state representative of the Committee on Medical Preparedness of the American Medical Association.

The committee has already started to work in the selection of the members that are to make up the local boards, the advisory boards and the inspecting personnel to be employed in the examination of the indicted civilians when the conscription law is approved and goes into effect.

Major Luis de la Vega of the Medical Corps of the National Guard of Puerto Rico, who is in charge of this work, was appointed adviser ex officio of the committee, as his military duties today prevent him from accepting a position in the committee.

The following are members of the Territorial Committee:

Dr. O. Costa Mandry, chairman.
Dr. E. Garrido Morales, San Juan.
Dr. David García, Rio Piedras.
Dr. M. de la Pila Iglesias, Ponce.
Dr. M. Guzmán Rodríguez, Mayaguez.
Dr. Nestor de Cardona, Aguadilla.
Dr. Eduardo Pérez, Guayama.
Dr. Manuel Astor, Arecibo.
Dr. Cesar Domínguez, Humacao.

INVENTORY OF HEALTH RESOURCES FOR DEFENSE PREPARATION

The Temporary Legislative Commission to Formulate a Long Range Health Program held a conference in New York, July 30, with representatives of various agencies on availability of health resources in the state in relation to preparation for national defense. Among the subjects on which the commission sought information were the availability and number of buildings that can be used as hospitals, space and availability for emergency beds in existing hospitals, resources for the production of tetanus toxoid in quantity, availability of

medical schools for teaching public health personnel, methods for selection of specialists, availability of industrial hygienists, dentists and sanitary engineers, the status of present personnel as to membership in National Guard or Reserves, rehabilitation of the unemployed and the number and availability of nurses and physicians. General discussion ended in an expression of opinion that the recommendation might well be made to the government of the state for the setting up of local defense committees embracing the various organizations interested in health, including the medical, dental and pharmaceutical professions, according to a report in the *New York State Journal of Medicine*. The conference was called by Lieutenant Governor Poletti as coordinator for national defense for the state.

NEW YORK PREPARES

At the request of the committee on medical preparedness of the Medical Society of the State of New York, a conference was held in Albany, July 29, of secretaries or other representatives of all county medical societies in the state, officers of the state society and chairmen of the committees on public health and education, public relations and economics, and representatives of the public relations bureau and of the temporary legislative commission to formulate a state health program. Dr. Samuel J. Kopetzky, New York, chairman of the committee on medical preparedness, explained the framework of plans for cooperation with the government in case of war conditions. Drs. Louis H. Bauer, Hempstead, and Edward T. Wentworth, Rochester, members of the committee, discussed questionnaires which the committee proposes to send out locally in addition to the national questionnaire distributed by the American Medical Association. Dr. O. W. H. Mitchell, chairman of the committee on public health and education, discussed plans for postgraduate instruction in subjects of particular importance in military medicine.

SURGICAL AID FOR THE BRITISH

Forty-eight physicians have formed the Medical and Surgical Supply Committee, with offices at 420 Lexington Avenue, New York, and undertaken a nationwide campaign for surgical and medical supplies to equip 500 first aid stations and field hospitals to aid in caring for the British war wounded. According to the New York *Times*, England has insufficient medical and surgical equipment to meet the present emergency. A first aid post, the committee said, can be equipped for $500. Among those on the committee are Drs. Joseph Felsen, Conrad Berens and Franz Groedel. The executive chairman of the committee is Mrs. Ronald B. Balcom.

BLOOD TO AID THE BRITISH WOUNDED

The New York Red Cross Chapter has announced that more than 300 persons have volunteered to donate blood to aid in the treatment of British war wounded. The technical work of the project is being done by the Blood Transfusion Betterment Association, Plasma Division, 3 East 103d Street, New York City. Persons willing to donate blood should write or telephone the association, Sacramento 2-8950.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Plague Infection in Fleas.—Plague infection has been proved in a pool of thirty-eight fleas from twenty-one golden mantled ground squirrels submitted to the state department of health laboratory, June 26, from a location 1 mile north of Fawnskin Resort, San Bernardino County.

Graduate Study for Central American Physicians.—The University of California Medical School, San Francisco, has adopted a plan whereby two young graduate physicians who speak English will be sent every year by each of the Central American nations for two years' special study in preclinical and clinical subjects under the guidance of an advisory committee. The committee will consist of Drs. Howard C. Naffziger, professor of surgery; Charles L. Connor, professor of pathology, and Ralph Soto-Hall, clinical instructor in orthopedic surgery.

CONNECTICUT

Dr. Blumer Retires.—Dr. George Blumer, since 1920 David P. Smith clinical professor of medicine, Yale University School of Medicine, New Haven, was guest at a dinner in June to mark his retirement from active service at the school. Dr. Francis G. Blake was toastmaster. The speakers included Drs. Stanhope Bayne-Jones, Milton C. Winternitz, William F. Verdi, Fu-ching Yen, a former student of Dr. Blumer and minister of health of the republic of China, and James R. Angell, LL.D. Born in Darlington, England, in 1872, Dr. Blumer graduated at Cooper Medical College, San Francisco, which is now known as Stanford University School of Medicine, in 1891. After serving on the faculties of Albany Medical College, Albany, N. Y., Cooper, and the University of California Medical School, Dr. Blumer joined the staff at Yale as professor of the theory and practice of medicine in 1906, then was John Slade Ely professor of the theory and practice of medicine from 1908 to 1920. He was dean of the school from 1910 to 1920. He has served as president of the New Haven city and county medical associations and of the Connecticut State Medical Society. Dr. Blumer has written extensively on medical subjects and collects prints of medical men as a hobby. He has been a member of the House of Delegates of the American Medical Association for many years.

GEORGIA

Annual Clinical Conference.—The Georgia section of the Southeastern Surgical Congress will hold its annual clinical conference at Statesboro, September 11, at the Bulloch County Hospital. The speakers will include:

Dr. Alfonso John Mooney Jr., Statesboro, Nephrolithiasis (A Sectional Problem).
Dr. James H. Whiteside, Statesboro, Ruptured Duodenal Ulcer.
Dr. Rufus L. Cone, Statesboro, Neurosurgery.
Dr. Patrick H. Smith, Savannah, Compound Fractures with Gas Bacillus Infection.
Dr. Job C. Patterson, Cuthbert, Educational Value of Rural Meetings of the Southeastern Surgical Congress.
Dr. Alfonso J. Mooney Sr., Statesboro, Carcinoma of the Uterus.
Dr. Robert Louis Kennedy, Metter, Cesarean Section.
Dr. Abram Bird Daniel, Statesboro, Acute Appendicitis with Drainage.
Dr. Cleveland Thompson, Millen, The Role of the Liver in Surgical Patients.

The speakers at the luncheon will include Dave Turner, editor of the Bulloch *Times*, Dr. Benjamin T. Beasley, Atlanta, secretary-treasurer of the Southeastern Surgical Congress, and Dr. Allen H. Bunce, Atlanta, president-elect, Medical Association of Georgia.

IDAHO

State Medical Meeting at Sun Valley.—The forty-eighth annual meeting of the Idaho State Medical Association will be held at Sun Valley, September 11-14, under the presidency of Dr. Fern M. Cole, Caldwell. A new feature of the program will be instruction courses each morning before the formal program by guest speakers. The lecturers will be:

Dr. Abram M. Newton, Pocatello, Treatment of Fractures of the Shaft of the Femur.
Dr. Arthur C. Jones, Boise, Commoner Diseases of the Eye, Ear, Nose and Throat.

Dr. Frank C. Gibson, Potlatch, Traumatic and Industrial Surgery.
Dr. Harry Alban, Kimberly, Acute Anterior Poliomyelitis.
Dr. James O. Cromwell, Blackfoot, The Neuroses.
Dr. Harold E. Dedman, Boise, Endometriosis, Diagnosis and Management.

The guest speakers, all of the State University of Iowa College of Medicine, Iowa City, who will give several addresses each, will be:

Dr. Ewen M. MacEwen, dean and professor of anatomy.
Dr. Adolph L. Sahs, assistant professor of neurology.
Dr. Fred M. Smith, professor of theory and practice of medicine.
Dr. Nathaniel G. Alcock, professor of urology.
Dr. Arthur Steindler, professor of orthopedic surgery.

MAINE

Society News.—At a joint meeting of Aroostook, Kennebec, Penobscot, Piscataquis and Somerset county medical societies in Greenville, July 25, Dr. John Homans, Boston, spoke on the following subjects in a surgical panel discussion: head injuries, acute intestinal obstruction, peripheral arterial gangrene and empyema. Dr. William B. S. Thomas, Dover-Foxcroft, discussed "The Cause of Some Diseases of Unknown Etiology."——Dr. Charles B. Sylvester, Portland, was elected president of the Maine Public Health Association at its twenty-ninth annual meeting in Kennebunk, July 11.——Franz U. Burkett, Portland, was chosen president of the Maine Medico-Legal Society at its annual meeting in Rangeley, June 25; Dr. William Holt, Portland, vice president; George L. Pratt, Farmington, secretary, and Walter S. Stinchfield, Skowhegan, treasurer.

MICHIGAN

Society News.—Dr. Richard A. Burke, Palmer, was chosen president-elect of the Upper Peninsula Medical Society at its annual meeting, July 10, and Dr. William Ellwood Tew, Bessemer, was installed as president.——Dr. Victor G. Heiser, New York, discussed "Health in Industry" before the Muskegon County Medical Society, Muskegon, recently.

Personal.—Dr. Robert J. Schneck has been appointed to the public welfare commission of Detroit, succeeding Dr. Frederick H. Cole. Dr. Schneck's appointment is for a four year term ending March 1, 1944.——Edward D. Rich, C.E., associated with the state department of health for twenty-nine years and for twenty-seven years director of the bureau of engineering, has retired, effective July 1. He has been succeeded by John M. Hepler, C.E., associate director, who has been connected with the department since 1919.——Dr. John Alexander, Ann Arbor, received the honorary degree of doctor of science from the University of Pennsylvania, Philadelphia, at the June commencement.

NEBRASKA

Course in Obstetrics and Pediatrics.—A two weeks course in obstetrics and pediatrics will be presented in five towns in western Nebraska, September 9-20, by the division of maternal and child health, Nebraska State Department of Health, in cooperation with the maternal and child health committee of the Nebraska State Medical Association and the University of Nebraska School of Medicine. Drs. Willis E. Brown, assistant professor of obstetrics and gynecology, and John L. Gedgoud, assistant professor of pediatrics at the university, will be the instructors. They will conduct clinics in the afternoons and lecture in the evenings. They will make a circuit each week of the following towns: Alliance, Chadron, Scottsbluff, North Platte and McCook.

NEW JERSEY

Personal.—Dr. Wells P. Eagleton, Newark, retired from the board of trustees of the Medical Society of New Jersey at the recent annual meeting after having served continuously for twenty-one years. The society presented to Dr. Eagleton its award of merit in recognition of "his services as medical director of the Newark Eye and Ear Infirmary for thirty years; for his ability as a brain surgeon; for his contributions to the literature on diseases and surgery of the brain; for the origination and development of many surgical procedures in the field of brain surgery, all of which have contributed to the advancement of scientific medicine in New Jersey and the nation."——Dr. William Russell Greenwood, assistant physician at Rutgers University, New Brunswick, has been appointed university physician and head of the department of student health, it is reported. He succeeds Dr. Joseph H. Kler, who resigned to devote more time to his private practice, but will remain as associate head of the department.

NEW YORK

Report on Typhoid Carriers.—The New York State Department of Health reports that 422 typhoid carriers were under its supervision in upstate New York at the close of 1939. Thirty-six new carriers were added to the list and twenty-six were removed during the year. Twenty-five were discovered as a result of investigation of sporadic cases of typhoid and eight by means of release cultures. Three were added on evidence submitted by other state health departments. Sixteen of those removed died; five were released after cholecystectomy and the required tests and five changed their place of residence.

Annual Chautauqua Meeting.—The ninth annual meeting of the Interstate Medical Association was held in Chautauqua, July 24. Dr. Nathan B. Van Etten, New York, President of the American Medical Association, gave an address; other speakers were Drs. Russell L. Haden, Cleveland, on "The Care of Anemia"; Arthur G. Davis, Erie, Pa., "The Care of Compound Wounds," and Abraham H. Aaron, Buffalo, "Self Medication and Its Dangers." There was also a panel discussion on "Recent Advances in Therapeutics" by Drs. Aaron, Louis Maxwell Lockie, Clayton W. Greene, Francis D. Leopold and Frank Meyers, all of Buffalo.

Society News.—Dr. William J. Hoffman, New York, addressed the Greene County Medical Society, Haines Falls, July 9, on "Modern Treatment of Cancer."——Drs. Samuel Edward Navarra and Milton Sills Lloyd, New York, addressed the Richmond County Medical Society in June on "Management of Strabismus" and "Pathology of Bullous Emphysema" respectively.——The Medical Society of the County of Schenectady has recently organized an orchestra, which gave its first concert at the recent semiannual meeting of the society after four months of rehearsal.——Dr. Leon M. Kysor, Hornell, was elected president of the Lake Keuka Medical and Surgical Association at the recent annual meeting at Penn Yan. Dr. Noble R. Chambers, Syracuse, was elected vice president and Dr. Virgil H. F. Boeck, Dundee, reelected secretary.

New York City

Graduate Courses at New York University.—Graduate courses are now being given in nine fields at New York University College of Medicine, it is announced. The period of study varies from one to three years and may be taken as preparatory training for a residency or complete training for specialty board examinations. Information about this type of work may be obtained from the office of the dean, 477 First Avenue, New York.

Lectures on Venereal Disease.—The bureau of social hygiene of the New York City Department of Health announces two groups of lectures on "Ambulatory Treatment of Venereal Diseases" to be held on Saturday mornings in the fall. The schedule follows:

September 14, Nonsyphilitic Infectious Granulomas.
September 21, Acute Gonorrhea in the Male.
September 28, Postacute Gonorrhea in the Male.
October 19, Infectious Syphilis, Primary.
October 26, Infectious Syphilis, Secondary.
November 2, Venereal Disease Control Measures.

The New York State Department of Health and the U. S. Public Health Service are cooperating in this program as part of the national defense preparedness program.

Medical War Relief Committee.—The American Doctors' War Relief Committee has been formed for neutral, nonmilitary aid to the sick and wounded in Europe. Officers are Dr. Clarence R. Straatsma chairman, Drs. Thomas H. Russell and Walter D. Ludlum Jr. vice chairmen, Dr. E. Forrest Merrill, executive secretary, and Dr. Con Amore V. Burt, treasurer. The committee is arranging to send mobile clinics, consisting of a trailer equipped for emergency operations and two light trucks to carry supplies. Physicians and surgeons to accompany each clinic will be chosen from American volunteers and native nurses will assist them. Each unit will, if possible, serve a circuit of seven towns and villages, devoting one day a week to each. The committee has headquarters at 18 Gramercy Park, with Mr. C. J. B. Harris as corresponding secretary.

NORTH CAROLINA

University News.—The division of public health at the University of North Carolina, Chapel Hill, has been changed to the School of Public Health, with Dr. Milton J. Rosenau as the dean. Dr. Rosenau has been director of the division of public health since it was established in 1936.

New Health Officers.—Dr. Margery J. Lord, Asheville, has been appointed city health officer, effective after she has completed a qualifying course in public health at the University of North Carolina. She has been acting health officer since December 1939. —— Dr. James J. Croley, McKinney, Texas, has been appointed health officer of Avery and Yancey counties to succeed Dr. Roderic O. Jones, who has entered private practice in Burnsville. —— Dr. Harold C. Whims, Rutherfordton, has resigned as health officer of the Rutherford-Polk counties health unit to take a similar position in the Catawba-Lincoln counties district.

OHIO

Commissioner of Mental Diseases Appointed.—Dr. Roy E. Bushong, superintendent of the Cleveland State Hospital, Cleveland, has been appointed state commissioner of mental diseases. He will collaborate with the department of public welfare in the supervision of the state institutions for the mentally ill, feebleminded and epileptic. Dr. Bushong succeeds Dr. Jesse Fremont Bateman, Columbus, who resigned to return to his former post as superintendent of the Columbus State Hospital.

PENNSYLVANIA

District Meeting. — The Fifth Councilor District of the Medical Society of the State of Pennsylvania held its annual meeting in York, August 22. Among the speakers were Drs. Charles-Francis Long, Philadelphia, on "Industrial Medicine—A Pressing Problem for All Physicians"; Harvey F. Smith, Harrisburg, "Preventable Deaths Among Youth Groups," and John J. Shaw, state secretary of health, Harrisburg, "Private Practitioner, Keystone of the Public Health Arch." The following officers of the state medical society also made addresses: Drs. Francis F. Borzell, Philadelphia, president-elect; Charles H. Henninger, Pittsburgh, president; Walter F. Donaldson, Pittsburgh, secretary, and Chauncey L. Palmer, Pittsburgh, chairman of the committee on public health legislation.

Philadelphia

Grants for Cancer Research.—The International Cancer Research Foundation has voted a grant of $1,200 to the Woman's Medical College of Pennsylvania for the use of Dr. Catharine Macfarlane in her studies of cancer of the uterus. The Pennsylvania division of the Woman's Field Army of the American Society for the Control of Cancer has contributed $250 to the same research.

Dr. Scheffey Succeeds Dr. Anspach. — Dr. Lewis C. Scheffey, clinical professor of gynecology, Jefferson Medical College of Philadelphia, has been elected professor of gynecology to succeed Dr. Brooke M. Anspach, who became professor emeritus. Dr. Scheffey graduated from Jefferson in 1920 and had previously taken a degree in pharmacy from the Philadelphia College of Pharmacy and Science. He served as resident physician in Jefferson Hospital from 1920 to 1922 and has been associated with the department of gynecology since that time. Dr. Anspach has held the chair of gynecology at Jefferson since 1921 and has been on the faculty since 1917.

Retirements at Temple.—Dr. Frank C. Hammond, professor of gynecology at Temple University School of Medicine since 1923 and dean from 1906 to 1929, and Dr. Jesse O. Arnold, professor of obstetrics, have resigned. Dr. Hammond, who is also editor of the *Pennsylvania Medical Journal*, will continue as chairman of the medical faculty. Dr. Arnold will be professor emeritus and senior obstetric consultant. Dr. Thaddeus L. Montgomery, clinical professor of obstetrics at Jefferson Medical College of Philadelphia, has been appointed head of the department of obstetrics and gynecology, succeeding both Dr. Hammond and Dr. Arnold. Dr. Montgomery graduated from Jefferson in 1920.

TENNESSEE

Changes in Health Officers.—Dr. John H. Solomon, Nashville, has been appointed health officer of a new health unit in Marshall County, with headquarters at Lewisburg.——Dr. Harry H. Hudson, Dyersburg, has succeeded Dr. Albert L. Ball, Cleveland, as head of the Bradley County health unit.

Society News.—Dr. Edward T. Newell addressed the Chattanooga and Hamilton County Medical Society, August 1, on "Cancer of the Breast: Cautery Excision Supported by Radium and X-Ray."——Dr. Robert H. Elder, Cedar Hill, discussed "Infant Diarrheas" at a meeting of the Robertson County Medical Society, Springfield, July 16.

VIRGINIA

State Medical Election.—The Medical Society of Virginia chose Dr. Roshier W. Miller, Richmond, as president-elect at its annual meeting at White Sulphur Springs, W. Va., in a joint session with the West Virginia Medical Association. Dr. Walter B. Martin, Norfolk, will become president in October. Vice presidents elected were Drs. John M. Emmett, Clifton Forge; John E. Knight, Warrenton, and Henry B. Mulholland, Charlottesville. The 1941 meeting will be held at Virginia Beach.

WASHINGTON

Dr. Sharples Honored.—A reception and dinner honoring Dr. Caspar W. Sharples, Seattle, on his completion of fifty years of practice was given by the King County Medical Society and the Washington State Medical Association at the Olympic Hotel, Seattle, July 13. About 300 attended. Dr. Sharples graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1888 and was licensed in 1890. He is chief of staff of the Children's Orthopedic Hospital and medical superintendent of the Seattle General Hospital. He is a past president of the North Pacific Surgical Association.

WEST VIRGINIA

Changes in Health Officers.—Dr. Edward G. McGavran, formerly with the Kellogg Foundation at Hillsdale, Mich., has been appointed health officer of Monongalia County to succeed Dr. Edwin Cameron, Morgantown, who became secretary of the Delaware State Board of Health.——Dr. William W. Hume, Beckley, has resigned as health officer of Raleigh County because of ill health. Dr. James M. Coram, St. Marys, is acting health officer.

Outbreak of Poliomyelitis. — More than 100 cases of poliomyelitis were reported in several counties in southern West Virginia, August 17. Thirty-nine cases, the largest number, with three deaths were reported in Cabell County. Logan County was second with twenty cases. One death each had been reported in Fayette and Kanawha counties. The West Virginia State Medical Association and the state department of public assistance are cooperating with the state department of public health in plans for prevention and rehabilitation. Restrictions against gatherings of children have been in force for several weeks in Huntington, where the disease first made its appearance, it was said.

WISCONSIN

State Medical Meeting in Milwaukee.—The program of the ninety-ninth annual meeting of the State Medical Society of Wisconsin to be held in Milwaukee, September 18-20, will place emphasis on industrial medicine and medicomilitary affairs. Twenty-five speakers from outside the state will appear at general and sectional meetings and at round table luncheons. The list includes:

Dr. Anthony J. Lanza, New York, Silicosis with Special Reference to Wisconsin Industry.
Dr. Gordon B. New, Rochester, Minn., Early and Late Treatment of Traumatic Injuries of the Face.
Dr. Lee Foshay, Cincinnati, The Diagnosis of Brucellosis.
Dr. Edwin F. Daily, Washington, D. C., Maternal Care and Maternal Mortality.
Dr. Kellogg Speed, Chicago, Some Common Every Day Injuries Around the Knee Joint.
Dr. Peter C. Kronfeld, Chicago, The Practical Value of Gonioscopy for the Understanding, Diagnosis and Treatment of Glaucoma.
Dr. Walter M. Boothby, Rochester, Minn., Physiologic Problems Involved in Aviation.
Col. Fred T. Cruse, F.A., U. S. Army, a medicomilitary subject.
Brig. Gen. Ralph M. Immell, adjutant general of Wisconsin, a medicomilitary subject.
Dr. John A. Bigler, Highland Park, Ill., Treatment of Pneumonia in Children with Sulfapyridine.

Dr. Franklin G. Ebaugh, professor of psychiatry, University of Colorado School of Medicine, Denver, will deliver the Rogers Memorial Lecture Thursday afternoon, September 19, on "Our Mental Health." At the annual dinner at the Hotel Schroeder Thursday evening the speaker will be Dr. Eben J. Carey, Milwaukee.

PUERTO RICO

University News. — Dr. Robert A. Lambert, associate director for the medical sciences, Rockefeller Foundation, New York, was guest of honor at a dinner in San Juan, July 14, given by physicians and former associates at the School of Tropical Medicine, University of Puerto Rico. Dr. Lambert was professor of pathology and the first director of the school, serving from 1926 to 1928.

GENERAL

New Organization of Surgeons.—During the recent annual meeting of the American Surgical Association in St. Louis, a new organization designed for the closer association of younger surgeons of the Middle West and the adjacent Canadian provinces was formed, to be known as the Central Surgical Association. Officers elected were Drs. Roy D. McClure, Detroit, president; Grover C. Penberthy, Detroit, president-elect, and George M. Curtis, Columbus, Ohio, secretary. The first regular meeting will be held in February 1941 at the University Hospital, Ann Arbor, Mich.

Funds for Venereal Disease Control.—The U. S. Public Health Service has allotted $5,672,388 to the states and territories and the District of Columbia for venereal disease control during the coming year. A special portion of these grants, amounting to $458,600, has been allotted on the basis of the extent of military and national defense industrial concentrations, it was announced. The remainder will be used to further research in new methods of treatment and diagnosis of syphilis and gonorrhea, for training of personnel, for coordination of educational efforts, and for cooperation with the states in planning and administration of the control program.

Association for Study of Neoplastic Diseases.—The annual meeting of the American Association for the Study of Neoplastic Diseases will be held at the Mayflower Hotel, Washington, D. C., September 5-7. Among speakers announced on the program are:

Dr. William T. McClure, Wheeling, W. Va., Adenocarcinoma of Ducts Engrafted on Old Cystic Disease.
Dr. Wright Clarkson, Petersburg, Va., Chronic Cystic Mastitis in the Male.
Dr. Charles F. Geschickter, Baltimore, Mammary, Gynecologic and Other Forms of Cancer in Rats Treated with Estrogens.
Dr. Rollin H. Stevens, Detroit, Present Day Treatment of Neoplasia and What Experimental Biochemistry Suggests for the Future.
Dr. Edgar C. Baker, Youngstown, Ohio, Three Cases of Bone Lesions Causing Paralysis of Lower Extremities.
Dr. Russell S. Ferguson, New York, Teratoma Testis.
Dr. Oscar B. Hunter, Washington, D. C., Tumor of the Thyroid Gland.
Drs. Louis Wallace Frank and Aura J. Miller, Louisville, Ky., Epithelioma of the Labia, with Discussion of Methods of Treatment.
Dr. Edwin A. Merritt, Washington, D. C., The Revised Clinical Classification of Carcinoma of the Cervix.
Dr. Louisa E. Keasbey, Lancaster, Pa., Primary Carcinoma of the Fallopian Tube.

Inter-American Society of Microbiology.—Committees have been appointed in fourteen South and Central American countries and in Cuba for the formation of an Inter-American Society of Microbiology, the initial plans for which were made at the close of the meeting of the International Congress of Microbiology in New York in September 1939 (THE JOURNAL, Dec. 23, 1939, p. 2332). The first congress of the new society is scheduled to take place in Brazil, with Dr. Antonio Fontes, director of the Istituto Oswaldo Cruz, Rio de Janeiro, as president. Dr. Francesc Duran-Reynals, research assistant in bacteriology, Yale University School of Medicine, New Haven, Conn., executive secretary, points out that steps that remain to be taken include organization of branches in the United States and Canada, establishment of a relationship with the International Society of Microbiology and establishment in the United States of an inter-American journal of microbiology, to be published in English and open to contributors from all American countries.

Changes in Status of Licensure.—The Alabama State Board of Medical Examiners reports the following:

Dr. Abijah Clements Fields, Birmingham, license restored, April 15.

The Illinois Department of Registration in Medicine announces the following:

Dr. James W. Ross, Harrisburg, Ill., license revoked, June 15, for violation of the Harrison Narcotic Act.
Dr. George Walton Gore, Benton, license revoked, April 20, for conviction of murder.

The Massachusetts Board of Registration in Medicine announces the following action:

Dr. Herbert N. du Gerardell, East Boston, license revoked, April 18, for gross misconduct in the practice of his profession as shown by deceit.

The Michigan State Board of Registration in Medicine announces the following action:

Dr. Boyajian Bedros Armen, Fresno, Calif., license revoked, June 11, for violation of the narcotic laws of California.

The New York State Board of Medical Examiners reports the following:

Dr. Saverio Bonta, New York, licensed revoked, June 20, on the basis of his having been convicted of a felony.
Dr. Charles I. Gordon, formerly of Brooklyn, license reinstated; it was revoked June 16, 1939.

American Hospital Association.—The forty-second annual convention of the American Hospital Association will be held at the Hotel Statler, Boston, September 16-20, under the presidency of Dr. Fred G. Carter, Cleveland. A feature of the meeting will be a general session on preparedness with addresses by the surgeons general of the Army, Navy and Public Health Service. Among addresses to be given in section meetings will be the following:

Dr. Sigismund S. Goldwater, New York, Next Steps in Hospital Service Plans.
Dr. Thomas T. Mackie and Dorothy DeHart, M.A., New York, A Nutritional Study of Hospital Diets.
Drs. Herman E. Hilleboe, St. Paul, and Maxim Pollak, Peoria, Ill., The Tuberculosis Problem in Mental Hospitals.
Dr. Charles F. Wilinsky, Boston, What Is Hospital Indigency?
Dr. Stanley J. Seeger, Milwaukee, The Content and Management of a Program of Education of Interns and Residents in a Small Hospital.

A symposium on "The Role of the General Hospital in the Control of Tuberculosis" will be presented by the following: Mr. John Hayes, superintendent of Lenox Hill Hospital, New York; Drs. Theodore L. Badger, Boston; Richard H. Overholt, Brookline, Mass.; Monroe J. Tanner, Ridgewood, N. J.; Alice L. Spellman and Katharine G. Amberson, both of Albany Hospital, Albany, N. Y. The annual banquet will be held Thursday evening, September 19, when Dr. Benjamin W. Black, Oakland, Calif., will be installed as president. Other organizations which will meet at the same time include: American Protestant Hospital Association, American Association of Nurse Anesthetists, American Association of Occupational Therapists and American College of Hospital Administrators.

Bequests and Donations.—The following bequests and donations have been announced in recent months:

Mount Sinai Hospital, $50,000, and Beekman Street Hospital, $5,000, by the will of the late Joseph F. Cullman. Both are in New York.
Lawrence Hospital, Bronxville, New Rochelle Hospital, New Rochelle, N. Y., and Mount Vernon Hospital, Mount Vernon, N. Y., $1,000 each by the will of the late George L. Bourne, Larchmont.
French Hospital, New York, $25,000, and St. Francis Sanatorium for Cardiac Children, Flower Hill, Roslyn, L. I., $50,000 by the will of the late Carlos W. Munson.
Touro Infirmary, New Orleans, $250,000 from Mrs. Norman C. Mayer in memory of her husband.
French Hospital, New York, $50,000 by the will of Albert Blum.
University Hospital, Philadelphia, $2,500; National Jewish Hospital, Denver, $2,000, and Jewish Hospital Association, Philadelphia, $1,000 by the will of Mrs. Anna E. Fridenberg.
Philadelphia Orthopedic Hospital, $20,000; Children's Hospital, $30,000, and Pennsylvania Institute for Instruction of the Blind, $30,000 by the will of the late Mrs. Josephine Eisenlohr.
Brady Urological Institute, Johns Hopkins University, Baltimore, $10,000 by the will of the late Willis Sharpe Kilmer, Binghamton, N. Y.
Episcopal Hospital of Philadelphia, the residuary estate of Margaret G. Holson, amounting to about $45,000, after the death of trust fund beneficiaries.
Jewish Hospital, Philadelphia, approximately $250,000 to build the Mary and David Hirsch Memorial Home for student nurses at the hospital, by the will of Mrs. Hirsch.
Germantown Hospital, Germantown, Pa., $5,000, and Northern Liberties Hospital, Philadelphia, $1,000 from the estate of the late Liborio Delfino.
Lankenau Hospital, Philadelphia, $5,000 by the will of Anna Lindhorst.
Misericordia Hospital and Babies' Hospital, Philadelphia, $5,000 each by the will of Michael J. Smith.
Wistar Institute of Anatomy, Philadelphia, about $13,000 to establish a fund to pay salaries of investigators. The fund was left by Mrs. Frances Hancock Greenough in memory of her husband, the late Dr. Milton J. Greenman, director of the institute for many years.
Reading Hospital, Reading, Pa., $10,000, and Crozer Home and Hospital, Chester, $5,000 by the will of Alvin B. Ehst.
St. Luke's Hospital and Manhattan Eye, Ear and Throat Hospital, New York, $10,000 each by the will of the late Mrs. Richard Marsh Hoe.
Presbyterian Hospital, New York, $5,000 by the will of Mrs. Lila V. Field.
New York Skin and Cancer unit of the New York Postgraduate Medical School and Hospital, $6,000 by the will of Mrs. Miriam L. Mooney.

CANADA

Canadian Society Elections.—Dr. Gordon S. Fahrni, Winnipeg, was chosen president-elect of the Canadian Medical Association at the annual meeting in Toronto in June, and Dr. Duncan Graham, Toronto, became president.——Dr. John H. Holbrook, Hamilton, Ont., was chosen president-elect of the Canadian Tuberculosis Association at the annual meeting in Montreal in June and Dr. J. Arthur Jarry, Montreal, became president. Dr. Robert E. Wodehouse, Ottawa, was elected vice president.

British Columbia Meeting.—The annual meeting of the British Columbia Medical Association will be held in Nelson, B. C., September 9-11. Among the speakers will be Drs. Albert M. Snell, Rochester, Minn., who will speak on "Deficiency States and Their Treatment" and "Problems Presented by the Jaundiced Patient"; Stuart W. Harrington, Rochester, "Diagnosis and Results of Radical Mastectomy for Carcinoma of the Breast in 5,026 Cases" and "Differential Diagnosis of

Diaphragmatic Hernia from Other Abdominal and Intrathoracic Conditions and Surgical Treatment in 250 Cases" and George H. Anderson, Spokane, "Hyperventilation Syndrome."

Canadian Physicians to Care for Children of British Physicians.—The Canadian Medical Association has informed the British Medical Association that homes of physicians in several provinces are ready to receive more than 1,100 children of British physicians, according to an announcement in the *Canadian Medical Association Journal*. Dr. Thomas C. Routley, Toronto, general secretary of the Canadian association, in a letter sent to secretaries of all divisions explained the plans agreed on by the Dominion and Provincial governments. He suggested that the secretaries ascertain the wishes of the medical profession with regard to the acceptance of children; notify the proper provincial authorities of the homes offered or advise doctors offering homes to notify the local welfare office; advise the doctors offering their homes that all further negotiations leading to the placing of children will be carried on between the governmental agency and the doctor. He also suggested that the divisions organize committees which would be responsible for taking a corporate interest in the children. Among other points in the plan Dr. Routley pointed out that hosts will be expected to provide maintenance and all other costs of these children in a manner similar to the care they would give their own children, except that the Dominion government will be responsible under certain conditions. The host will, for instance, be expected to provide ordinary medical care, but under no circumstances will the host be called on to bear the cost of hospitalization or major medical care, the department of public welfare for Ontario announced.

LATIN AMERICA

Society News.—The first National Congress of Child Welfare (Congreso Nacional de Puericultura) will be held in Buenos Aires, Argentina, October 7-11. Subjects to be discussed include growth and physical development, psychic development, rickets, legislation and organization for prophylactic care of the child, prophylaxis of tuberculosis and indications of syphilis in childhood.

Personal.—Prof. W. H. Hoffmann of the Finlay Institute, Habana, Cuba, has been elected honorary member of the Sociedad Colombiana de Leprología in Bogotá.——Dr. Clemente Estable, honorary professor of medicine in the National University of Uruguay and chief of the technical laboratory of histologic research in the National Neurologic Institute, Montevideo, is visiting laboratories and medical schools in the United States.——Prof. Octavio do Rego Lopes has been appointed in charge of clinical ophthalmology at the National Faculty of Medicine of the University of Brazil.——Dr. Ramon Castroviejo, New York, recently gave several lectures on ophthalmic surgery as the guest of the Daniel A. Carrión Peruvian Medical Association, Lima, Peru. The Faculty of Medical Sciences gave him an honorary degree and the medical association honored him at a banquet before his departure.

Deaths in Other Countries

Dr. William Russell, emeritus professor of clinical medicine, Edinburgh University, died August 12, aged 89. He was former president of the Royal College of Physicians, was the first editor of the *Scottish Medical and Surgical Journal* and wrote several books dealing principally with diseases of the heart and circulation.——**Dr. Thierry de Martel**, chief surgeon of the American Hospital of Paris, committed suicide on the day that the German Army occupied Paris.

Government Services

Personals

Dr. Edward J. Stieglitz, Garrett Park, Md., has been appointed research associate in gerontology at the National Institute of Health to organize a new unit of research to deal with problems of aging.

Capt. Robert E. Hoyt has succeeded Capt. Edgar L. Woods as commander of the Naval Hospital, Washington, D. C. Captain Hoyt was formerly medical officer in charge of the Naval Dispensary at Washington.

Dr. Hermon E. Hasseltine, Medical Director in the U. S. Public Health Service, has been transferred from the National Leprosarium at Carville, La., to Cincinnati as officer in charge of the stream pollution laboratory. Dr. Guy H. Faget, recently stationed in San Francisco, replaced Dr. Hasseltine as medical officer in charge at the Leprosarium.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 27, 1940.

The Food Situation

The food situation continues to be good but with the continuance of the war there are further restrictions. Margarine is now rationed as well as butter, and tea is rationed to 2 ounces a week per person. To spare shipping wanted for munitions the campaign to grow more food was started at the outbreak of the war and we have now two million more acres under cultivation. There is plenty of scope for more home grown food, for we are the only nation of which it can be said that normally we produce only 40 per cent of our total food. But our real production is not more than 30 per cent, because part of our home produced animal food is transformed into imported feeding stuffs. It is realized that we may have to go much further in relying on home produced food. In the House of Commons Mr. Hudson, minister of agriculture, stated that we must take steps to raise, as far as was possible, enough food to keep our population alive and in good health, even if our present imports should be seriously imperiled. Scientists stated that our people could exist in a state of health, do hard work, produce munitions and fight on a diet far different from that to which we were accustomed. The greater proportion of this diet could be grown in the country, so that, if necessary, we could manage with greatly reduced imports. He did not know that it would seem a very palatable diet, but the house would perhaps be relieved to know that he had put in a plea that it should be supplemented by beer. The Ministry of Food would lay down what food was to be produced. In many cases farmers would be asked to alter drastically their normal production.

A committee of eminent scientists has been appointed by the government to work out a basic plan of war time food policy. The chairman is Sir William Bragg, president of the Royal Society (physicist). Members of the committee include Prof. E. P. Cathcart, F.R.S. (physiologist), Sir John Boyd Orr, F.R.S., Prof. F. L. Engledow, F.R.S., Prof. A. W. Ashby and Prof. J. A. Scott-Watson (agriculturists) and Sir Edward Mellanby, F.R.S., secretary of the Medical Research Council (biochemist). The committee will work out a basic plan of war time food policy for the country.

Stored Blood for Transfusion

From the Emergency Blood Transfusion Service of Edinburgh and Southeast Scotland C. P. Stewart reports in the *Edinburgh Medical Journal* studies on the use of stored blood in 427 transfusions. He points out that for certain purposes the therapeutic value of blood must steadily decrease during storage. Thus the disappearance of leukocytes, reported by several observers, means that blood should not have been more than two days in store if one of the objects for which it is used is to supply leukocytes. But if the object is to supply fluid and oxygen carrying power there seems no reason, on the basis of laboratory examinations of stored blood, why it should not be used after as much as thirty days of storage. However, clinical trial is essential and it is extremely difficult to judge the relative value of stored and fresh blood. In surgical cases the therapeutic results appear to be independent of the age of the blood. But in such conditions as leukemia, various types of anemia, septicemia and toxemia, blood is now used which has been in store as short a time as possible and the results have greatly improved.

All the transfusions in this series were done with blood which had been withdrawn into 3.8 per cent sodium citrate solution with a final concentration of 0.38 per cent citrate, stored at a temperature of from 2 to 5 C. In most cases it had been filtered

after being stored for forty-eight hours. In the 427 cases there were fifty-eight reactions, of which nine were fatal; sixteen were only febrile, seven were transient jaundice and twenty-six were rigors. The total percentage of reactions was 13.6, which in the 259 cases of the series of transfusions done in the present year was reduced to 10.4 with only one death. This reduction of incidence of reactions coincided with the use of blood of lower average "age." The deaths appeared to be due to acute cardiac failure following injection of fluid and not to any factors which could be attributed to the use of stored blood, though some followed a transfusion reaction (rigor). One writer, V. H. Riddell, states in his book on Blood Transfusion that deaths from circulatory failure after transfusion with fresh blood are much commoner than is generally supposed, although they are rarely reported.

Stewart investigated the relation between the incidence of reactions and the time of storage by classifying the cases into five day periods. Under twenty-four hours the percentage was 12.5, from one to five days 14, from six to ten days 5.2, from eleven to fifteen days 15.6, from sixteen to twenty days 22, from twenty-one to twenty-five days 15 and from twenty-five to thirty days 26. When the cases were further analyzed according to the storage time in days from none to fourteen it was found that blood stored from four to ten days was safer than blood stored for a shorter time and even than fresh blood. The reason for this was not clear, but it might be related to the disappearance of leukocytes during the first few days of storage. The increased reaction incidence after the tenth day may be associated with the disruption of erythrocytes. It appears that stored blood is no more likely to produce reactions during the first fortnight than is fresh blood. But after that period the likelihood of reaction is increased. Therefore, while it is possible to use in cases of emergency blood stored longer than a fortnight, it seems better in ordinary cases to regard this period as the maximum.

SWITZERLAND

(From Our Regular Correspondent)

July 14, 1940.

Injuries in Airplane Crashes

Dr. Wegelin, professor of pathologic anatomy, recently discussed before the medical association of Berne the injuries sustained by fliers who crash to the ground. The injuries, he said, are exceedingly serious. Countless bone fractures, extensive lacerations of the soft parts, bruises and wounds in the abdominal region can be observed. Owing to the sudden increase in intra-abdominal pressure the viscera are eventrated into the thorax cavity with rupture of the diaphragm. Rupture of the scrotum is also observed. The sudden increase of intracardial pressure produces lesions in the region of the heart. The heart is often torn from the large vessels. Cardiac lesions, the speaker said, cause immediate cessation of the circulation. For that reason fat embolism is never observed. According to the literature, hemosiderin is discoverable in the lungs after hemorrhages that occur at high altitudes. This, however, has not been observed in aviators who crash. Wegelin was able to observe a heart that had burst at the apex.

Control of Mental Diseases

In proportion to its population, Switzerland has more institutions for the mentally diseased than any other European country, namely thirty-eight psychiatric beds per 10,000 inhabitants. Every public institution of this kind is provided, on the average, with 500 beds; private institutions have fewer than 100. The majority of mentally diseased patients remain hospitalized a relatively short time. In 1935 half of the inmates were confined for less than three months, 80 per cent for less than one year. Fifteen per cent of the patients were regarded as medically or at least socially cured, 45 per cent as improved and 25 per cent in statu quo; 15 per cent died. The public cost for the care of the mentally diseased amounts to 20 million Swiss francs (about $4,500,000) annually. Prophylaxis and control outside institutional care include welfare work, neuropsychiatric policlinics, psychiatric observation stations for children, medicopedagogic arrangements and antialcohol welfare stations. All these agencies were supplemented by the creation about ten years ago of the Swiss national committee for mental hygiene, which deals with all problems connected with the control of mental diseases.

Swiss Society for Gastro-Enterology

The Schweizerische Gesellschaft für Gastro-Enterologie was organized a few years ago and recently held its annual meeting in Basel. The papers dealt with albuminous nutrition for sportsmen, esophagoplasty, effect of corticosterone on idiopathic steatorrhea, diagnosis of ulcers, dieting in colitis ulcerosa, protamine zinc insulin, roentgen therapy in carcinoma of the esophagus, the unexpected improvement in the metabolism due to intestinal baths and the significance of cell content of gastric juice.

Personal

Prof. Friedrich Suter, professor of urology in Basel, celebrated his seventieth birthday.

Dr. Otto Veraguth, associate professor of physical therapy in Zurich and director of the university institute for physical therapeutics, retired. Prof. Kurt von Neergarrd, his assistant for many years, was appointed to succeed him.

Military Use of Hotels

The Swiss federal council has resolved to use hotels for military and medical purposes. Rates for compensation have been set up.

Deaths

Prof. Charles Edouard Monnier, a pediatric surgeon in Zurich, died in his sixty-fifth year.

Marriages

RICHARD ALEXANDER HAMILTON, Springfield, Ky., to Miss Evelyn Elizabeth Patterson of Chattanooga, Tenn., July 12.

DAVID W. GOLTMAN to Miss Mary Helen Slattery, both of Memphis, Tenn., at Hernando, Miss., July 2.

FRANCIS F. TALBOT, Niagara Falls, N. Y., to Miss Florence O'Donoghue of Washington, D. C., July 15.

SAM MARSHALL COOPER, Knoxville, Tenn., to Miss Evelyn Lorraine Williams in New York, July 12.

JESSE GORDON SEASTRUNK, Columbia, S. C., to Miss Elizabeth Allen Parrott of Charleston, July 6.

WILLIAM SPENCER FAST, Atchison, Kan., to Miss Jane Adele Poindexter of Kansas City, Mo., July 10.

RICHARD L. PEARSE, Durham, N. C., to Miss Harriet Isobel Taggart of Tidioute, Pa., July 12.

ALBERT CHARLES ESPOSITO to Miss Vernon Elizabeth Dodson, both of Lexington, Ky., July 17.

PAUL JAMES AZAR, Washington, La., to Miss Mary Agnes Saloom of La Fayette, July 15.

WILLIAM REID PITTS, Glen Alpine, N. C., to Miss Elizabeth Creamer of Brooklyn, July 10.

GORDON S. FESSLER, Cincinnati, to Miss Ida Marie Lettieri of Shelby, Ohio, June 29.

WILLIAM B. ARMSTRONG to Miss Henrietta Collier, both of Atlanta, Ga., August 1.

THOMAS JOSEPH HARRIGAN, Altoona, Pa., to Miss Regina Ruth Stevens, July 17.

GEORGE HENRY ZERBST, Sumter, S. C., to DR. HILLA SHERIFF of Columbia, July 10.

SAMUEL J. HYMAN to Miss Cecelia Fisher, both of Inkster, Mich., July 16.

ALFRED A. GOGLIA, Boston, to Miss Molly Goglia of Bristol, R. I., in July.

Deaths

Howard Lincoln Snyder ✠ Winfield, Kan.; Jefferson Medical College of Philadelphia, 1904; member of the House of Delegates of the American Medical Association from 1936 to 1940; past president of the Kansas Medical Society; member of the board of governors of the American College of Surgeons; state chairman of the American Society for the Control of Cancer; member of the board of regents of the state of Kansas, which has under its supervision all affairs incident to state schools; surgeon on the staff of St. Mary's Hospital and the William Newton Memorial Hospital; aged 61; died, August 16, of coronary occlusion, hypertension and arteriosclerosis.

Everett Foster Jones ✠ Wichita Falls, Texas; University of Texas School of Medicine, Galveston, 1908; fellow of the American College of Surgeons; past president of the Wichita County Medical Society; served during the World War; past president of the Texas Railway Surgeons' Association; on the staffs of the Wichita Falls Clinic-Hospital and Wichita General Hospital; aged 55; died, July 15, of coronary artery disease.

John William Moore ✠ Charleston, W. Va.; University and Bellevue Hospital Medical College, New York, 1899; fellow of the American College of Physicians; served during the World War; at one time a medical missionary; superintendent of the Mountain State Hospital; formerly superintendent of the Charleston General Hospital; aged 70; died, July 20, of coronary thrombosis and arteriosclerosis.

Herbert William Jones, Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1901; member of the Minnesota State Medical Association; at one time clinical assistant in medicine at his alma mater; formerly on the staffs of the Northwestern Hospital, City Hospital and the Asbury Hospital; aged 67; died, July 10, of heart disease.

Sidney Israel ✠ Houston, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1908; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otological Society; on the staff of the Jefferson Davis Hospital; aged 53; died, July 17, of acute coronary occlusion.

Herman Orsen Seipel, Valparaiso, Ind.; Chicago College of Medicine and Surgery, 1914; member of the Indiana State Medical Association; formerly health officer of Valparaiso and county coroner; county health officer; on the staff of the Porter Memorial Hospital; served during the World War; aged 54; died, July 19, of coronary occlusion.

Charles Eliot Brown, Leavenworth, Kan.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; member of the Kansas Medical Society; formerly county health officer; aged 62; died, June 17, in the Cushing Memorial Hospital of empyema of the gallbladder and hypertensive heart disease.

Joseph Pink Harris ✠ Midlothian, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1918; past president of the Ellis County Medical Society; served during the World War; aged 57; died, May 18, in a hospital at Waxahachie of injuries received in an automobile accident.

Sterling Price Boothe, Cuero, Texas; University of Tennessee Medical Department, Nashville, 1906; member of the State Medical Association of Texas; served during the World War; on the staff of the Lutheran Hospital; aged 56; died, July 25, in the Nix Hospital, San Antonio, of pneumonia.

Mary Theresa Muldoon ✠ Waltham, Mass.; Tufts College Medical School, Boston, 1915; member of the New England Society of Psychiatry; on the staff of the Walter E. Fernald State School; aged 46; died, July 18, in the New England Hospital for Women and Children, Boston.

Dennis William Heffernan, Framingham, Mass.; Tufts College Medical School, Boston, 1910; fellow of the American College of Surgeons; served during the World War; aged 55; on the staff of the Framingham Union Hospital, where he died, July 22, of carcinoma of the pancreas.

Wallace Hanger Livingston ✠ Santa Fe, N. M.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; past president of the New Mexico Board of Medical Examiners; aged 55; died, May 25, of pulmonary tuberculosis.

John Irvin Maris, Paoli, Ind.; Hospital College of Medicine, Louisville, Ky., 1903; member of the Indiana State Medical Association; president of the school board; served during the World War; aged 60; died, July 15, of coronary occlusion.

Albert Luke Stubbs, Hot Springs, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1895; St. Louis College of Physicians and Surgeons, 1898; aged 74; died, June 12, at Edgemont of injuries received in an automobile accident.

Lewis Hunker, Moberly, Mo.; Washington University School of Medicine, St. Louis, 1903; member of the Missouri State Medical Association; aged 61; died, June 25, when he severed his left brachial artery.

Eugene Elmo May, Birmingham, Ala.; University of Nashville (Tenn.) Medical Department, 1900; member of the Medical Association of the State of Alabama; aged 62; died, July 23, of cerebral hemorrhage.

Murray Ross Watson, Mineral City, Ohio; Michigan College of Medicine and Surgery, Detroit, 1898; member of the Ohio State Medical Association; aged 64; died, July 14, of coronary thrombosis.

John Randolph Sledge, Stamford, Texas; College of American Medicine and Surgery, Atlanta, Ga., 1876; formerly health officer and mayor of Stamford; aged 84; died, June 16, of pneumonia.

Ralph Mott Erwin, Portland, Ore.; Chicago College of Medicine and Surgery, 1908; for many years county coroner; aged 55; died, July 12, in the Hahnemann Hospital of coronary thrombosis.

Harry E. Cover, Bantam, Ohio; Medical College of Ohio, Cincinnati, 1897; member of the Ohio State Medical Association; aged 68; died, July 22, of arteriosclerosis and chronic nephritis.

Barton Martin Winters, Goodville, Pa.; Jefferson Medical College of Philadelphia, 1877; aged 85; died, July 22, in Washington, D. C., of hypertensive heart disease and pulmonary edema.

Irvin Rue Peter, Wallace, Mo.; Northwestern Medical College, St. Joseph, 1886; Jefferson Medical College of Philadelphia, 1891; aged 75; died, July 23, of cerebral embolism.

Albert Allen Absher ✠ Sibley, Ill.; College of Physicians and Surgeons of Chicago, 1893; aged 71; died, July 20, in the Brokaw Hospital, Normal, of cerebral hemorrhage.

Charles Barton Lawrence, Columbia, Mo.; University of Louisville (Ky.) Medical Department, 1890; aged 73; died, May 18, following an operation on the prostate.

William Frederick Roberts, Delaware, Ohio; Harvard Medical School, Boston, 1902; aged 66; died, June 30, of cerebral hemorrhage and fracture of the hip.

Benning M. Kennon, McRae, Ga.; Atlanta Medical College, 1889; member of the Medical Association of Georgia; aged 78; died, June 29, of diabetes mellitus.

William Murray Winn ✠ St. Louis; National University of Arts and Sciences Medical Department, St. Louis, 1918; aged 46; died, May 14, of mitral stenosis.

Arthur Leon Brown, Riverside, Calif.; Medical College of Ohio, Cincinnati, 1896; served during the World War; aged 67; died, June 24, of coronary occlusion.

Thomas Roi Barney, San Francisco; Cooper Medical College, San Francisco, 1903; aged 70; died, May 16, of chronic myocarditis and arteriosclerosis.

Wilfred Joseph Johnston, Sarasota, Fla.; University of Toronto Faculty of Medicine, 1916; aged 47; died June 29, in Philadelphia of heart disease.

Patrick Otis Lowe, Laneville, Texas; University of Texas School of Medicine, Galveston, 1913; aged 50; died, July 9, of carcinoma of the left cheek.

John William Shook, Canal Winchester, Ohio; Columbus Medical College, 1885; aged 87; died, July 16, in Lancaster of lung abscess.

H. L. Park, Union City, Tenn.; College of Physicians and Surgeons, Baltimore, 1886; aged 85; died, July 11, of chronic myocarditis.

Gilbert Franklin Buxton, Baltimore; College of Physicians and Surgeons, Baltimore, 1907; aged 63; died, May 6, of myocarditis.

James W. Ryan, Coffeyville, Kan.; Medical College of Ohio, Cincinnati, 1888; aged 73; died, June 8, in Dallas, Texas.

Robert Burton Armstrong, Papillion, Neb.; Medical Department of Omaha University, 1894; aged 75; died, June 28.

David C. Posey ✠ Christiana, Pa.; Baltimore Medical College, 1908; aged 60; died, July 6, of coronary thrombosis.

Jesse B. Davis, Chicago; American Medical College, St. Louis, 1883; aged 80; died, July 29, of arteriosclerosis.

after being stored for forty-eight hours. In the 427 cases there were fifty-eight reactions, of which nine were fatal; sixteen were only febrile, seven were transient jaundice and twenty-six were rigors. The total percentage of reactions was 13.6, which in the 259 cases of the series of transfusions done in the present year was reduced to 10.4 with only one death. This reduction of incidence of reactions coincided with the use of blood of lower average "age." The deaths appeared to be due to acute cardiac failure following injection of fluid and not to any factors which could be attributed to the use of stored blood, though some followed a transfusion reaction (rigor). One writer, V. H. Riddell, states in his book on Blood Transfusion that deaths from circulatory failure after transfusion with fresh blood are much commoner than is generally supposed, although they are rarely reported.

Stewart investigated the relation between the incidence of reactions and the time of storage by classifying the cases into five day periods. Under twenty-four hours the percentage was 12.5, from one to five days 14, from six to ten days 5.2, from eleven to fifteen days 15.6, from sixteen to twenty days 22, from twenty-one to twenty-five days 15 and from twenty-five to thirty days 26. When the cases were further analyzed according to the storage time in days from none to fourteen it was found that blood stored from four to ten days was safer than blood stored for a shorter time and even than fresh blood. The reason for this was not clear, but it might be related to the disappearance of leukocytes during the first few days of storage. The increased reaction incidence after the tenth day may be associated with the disruption of erythrocytes. It appears that stored blood is no more likely to produce reactions during the first fortnight than is fresh blood. But after that period the likelihood of reaction is increased. Therefore, while it is possible to use in cases of emergency blood stored longer than a fortnight, it seems better in ordinary cases to regard this period as the maximum.

SWITZERLAND

(From Our Regular Correspondent)

July 14, 1940.

Injuries in Airplane Crashes

Dr. Wegelin, professor of pathologic anatomy, recently discussed before the medical association of Berne the injuries sustained by fliers who crash to the ground. The injuries, he said, are exceedingly serious. Countless bone fractures, extensive lacerations of the soft parts, bruises and wounds in the abdominal region can be observed. Owing to the sudden increase in intra-abdominal pressure the viscera are eventrated into the thorax cavity with rupture of the diaphragm. Rupture of the scrotum is also observed. The sudden increase of intracardial pressure produces lesions in the region of the heart. The heart is often torn from the large vessels. Cardiac lesions, the speaker said, cause immediate cessation of the circulation. For that reason fat embolism is never observed. According to the literature, hemosiderin is discoverable in the lungs after hemorrhages that occur at high altitudes. This, however, has not been observed in aviators who crash. Wegelin was able to observe a heart that had burst at the apex.

Control of Mental Diseases

In proportion to its population, Switzerland has more institutions for the mentally diseased than any other European country, namely thirty-eight psychiatric beds per 10,000 inhabitants. Every public institution of this kind is provided, on the average, with 500 beds; private institutions have fewer than 100. The majority of mentally diseased patients remain hospitalized a relatively short time. In 1935 half of the inmates were confined for less than three months, 80 per cent for less than one year. Fifteen per cent of the patients were regarded as medically or at least socially cured, 45 per cent as improved and 25 per cent in statu quo; 15 per cent died. The public cost for the care of the mentally diseased amounts to 20 million Swiss francs (about $4,500,000) annually. Prophylaxis and control outside institutional care include welfare work, neuropsychiatric policlinics, psychiatric observation stations for children, medicopedagogic arrangements and antialcohol welfare stations. All these agencies were supplemented by the creation about ten years ago of the Swiss national committee for mental hygiene, which deals with all problems connected with the control of mental diseases.

Swiss Society for Gastro-Enterology

The Schweizerische Gesellschaft für Gastro-Enterologie was organized a few years ago and recently held its annual meeting in Basel. The papers dealt with albuminous nutrition for sportsmen, esophagoplasty, effect of corticosterone on idiopathic steatorrhea, diagnosis of ulcers, dieting in colitis ulcerosa, protamine zinc insulin, roentgen therapy in carcinoma of the esophagus, the unexpected improvement in the metabolism due to intestinal baths and the significance of cell content of gastric juice.

Personal

Prof. Friedrich Suter, professor of urology in Basel, celebrated his seventieth birthday.

Dr. Otto Veraguth, associate professor of physical therapy in Zurich and director of the university institute for physical therapeutics, retired. Prof. Kurt von Neergarrd, his assistant for many years, was appointed to succeed him.

Military Use of Hotels

The Swiss federal council has resolved to use hotels for military and medical purposes. Rates for compensation have been set up.

Deaths

Prof. Charles Edouard Monnier, a pediatric surgeon in Zurich, died in his sixty-fifth year.

Marriages

RICHARD ALEXANDER HAMILTON, Springfield, Ky., to Miss Evelyn Elizabeth Patterson of Chattanooga, Tenn., July 12.

DAVID W. GOLTMAN to Miss Mary Helen Slattery, both of Memphis, Tenn., at Hernando, Miss., July 2.

FRANCIS F. TALBOT, Niagara Falls, N. Y., to Miss Florence O'Donoghue of Washington, D. C., July 15.

SAM MARSHALL COOPER, Knoxville, Tenn., to Miss Evelyn Lorraine Williams in New York, July 12.

JESSE GORDON SEASTRUNK, Columbia, S. C., to Miss Elizabeth Allen Parrott of Charleston, July 6.

WILLIAM SPENCER FAST, Atchison, Kan., to Miss Jane Adele Poindexter of Kansas City, Mo., July 10.

RICHARD L. PEARSE, Durham, N. C., to Miss Harriet Isobel Taggart of Tidioute, Pa., July 12.

ALBERT CHARLES ESPOSITO to Miss Vernon Elizabeth Dodson, both of Lexington, Ky., July 17.

PAUL JAMES AZAR, Washington, La., to Miss Mary Agnes Saloom of La Fayette, July 15.

WILLIAM REID PITTS, Glen Alpine, N. C., to Miss Elizabeth Creamer of Brooklyn, July 10.

GORDON S. FESSLER, Cincinnati, to Miss Ida Marie Lettieri of Shelby, Ohio, June 29.

WILLIAM B. ARMSTRONG to Miss Henrietta Collier, both of Atlanta, Ga., August 1.

THOMAS JOSEPH HARRIGAN, Altoona, Pa., to Miss Regina Ruth Stevens, July 17.

GEORGE HENRY ZERBST, Sumter, S. C., to DR. HILLA SHERIFF of Columbia, July 10.

SAMUEL J. HYMAN to Miss Cecelia Fisher, both of Inkster, Mich., July 16.

ALFRED A. GOGLIA, Boston, to Miss Molly Goglia of Bristol, R. I., in July.

Deaths

Howard Lincoln Snyder ✱ Winfield, Kan.; Jefferson Medical College of Philadelphia, 1904; member of the House of Delegates of the American Medical Association from 1936 to 1940; past president of the Kansas Medical Society; member of the board of governors of the American College of Surgeons; state chairman of the American Society for the Control of Cancer; member of the board of regents of the state of Kansas, which has under its supervision all affairs incident to state schools; surgeon on the staff of St. Mary's Hospital and the William Newton Memorial Hospital; aged 61; died, August 16, of coronary occlusion, hypertension and arteriosclerosis.

Everett Foster Jones ✱ Wichita Falls, Texas; University of Texas School of Medicine, Galveston, 1908; fellow of the American College of Surgeons; past president of the Wichita County Medical Society; served during the World War; past president of the Texas Railway Surgeons' Association; on the staffs of the Wichita Falls Clinic-Hospital and Wichita General Hospital; aged 55; died, July 15, of coronary artery disease.

John William Moore ✱ Charleston, W. Va.; University and Bellevue Hospital Medical College, New York, 1899; fellow of the American College of Physicians; served during the World War; at one time a medical missionary; superintendent of the Mountain State Hospital; formerly superintendent of the Charleston General Hospital; aged 70; died, July 20, of coronary thrombosis and arteriosclerosis.

Herbert William Jones, Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1901; member of the Minnesota State Medical Association; at one time clinical assistant in medicine at his alma mater; formerly on the staffs of the Northwestern Hospital, City Hospital and the Asbury Hospital; aged 67; died, July 10, of heart disease.

Sidney Israel ✱ Houston, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1908; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otological Society; on the staff of the Jefferson Davis Hospital; aged 53; died, July 17, of acute coronary occlusion.

Herman Orsen Seipel, Valparaiso, Ind.; Chicago College of Medicine and Surgery, 1914; member of the Indiana State Medical Association; formerly health officer of Valparaiso and county coroner; county health officer; on the staff of the Porter Memorial Hospital; served during the World War; aged 54; died, July 19, of coronary occlusion.

Charles Eliot Brown, Leavenworth, Kan.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1904; member of the Kansas Medical Society; formerly county health officer; aged 62; died, June 17, in the Cushing Memorial Hospital of empyema of the gallbladder and hypertensive heart disease.

Joseph Pink Harris ✱ Midlothian, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1918; past president of the Ellis County Medical Society; served during the World War; aged 57; died, May 18, in a hospital at Waxahachie of injuries received in an automobile accident.

Sterling Price Boothe, Cuero, Texas; University of Tennessee Medical Department, Nashville, 1906; member of the State Medical Association of Texas; served during the World War; on the staff of the Lutheran Hospital; aged 56; died, July 25, in the Nix Hospital, San Antonio, of pneumonia.

Mary Theresa Muldoon ✱ Waltham, Mass.; Tufts College Medical School, Boston, 1915; member of the New England Society of Psychiatry; on the staff of the Walter E. Fernald State School; aged 46; died, July 18, in the New England Hospital for Women and Children, Boston.

Dennis William Heffernan, Framingham, Mass.; Tufts College Medical School, Boston, 1910; fellow of the American College of Surgeons; served during the World War; aged 55; on the staff of the Framingham Union Hospital, where he died, July 22, of carcinoma of the pancreas.

Wallace Hanger Livingston ✱ Santa Fe, N. M.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; past president of the New Mexico Board of Medical Examiners; aged 55; died, May 25, of pulmonary tuberculosis.

John Irvin Maris, Paoli, Ind.; Hospital College of Medicine, Louisville, Ky., 1903; member of the Indiana State Medical Association; president of the school board; served during the World War; aged 60; died, July 15, of coronary occlusion.

Albert Luke Stubbs, Hot Springs, S. D.; College of Physicians and Surgeons, Keokuk, Iowa, 1895; St. Louis College of Physicians and Surgeons, 1898; aged 74; died, June 12, at Edgemont of injuries received in an automobile accident.

Lewis Hunker, Moberly, Mo.; Washington University School of Medicine, St. Louis, 1903; member of the Missouri State Medical Association; aged 61; died, June 25, when he severed his left brachial artery.

Eugene Elmo May, Birmingham, Ala.; University of Nashville (Tenn.) Medical Department, 1900; member of the Medical Association of the State of Alabama; aged 62; died, July 23, of cerebral hemorrhage.

Murray Ross Watson, Mineral City, Ohio; Michigan College of Medicine and Surgery, Detroit, 1898; member of the Ohio State Medical Association; aged 64; died, July 14, of coronary thrombosis.

John Randolph Sledge, Stamford, Texas; College of American Medicine and Surgery, Atlanta, Ga., 1876; formerly health officer and mayor of Stamford; aged 84; died, June 16, of pneumonia.

Ralph Mott Erwin, Portland, Ore.; Chicago College of Medicine and Surgery, 1908; for many years county coroner; aged 55; died, July 12, in the Hahnemann Hospital of coronary thrombosis.

Harry E. Cover, Bantam, Ohio; Medical College of Ohio, Cincinnati, 1897; member of the Ohio State Medical Association; aged 68; died, July 22, of arteriosclerosis and chronic nephritis.

Barton Martin Winters, Goodville, Pa.; Jefferson Medical College of Philadelphia, 1877; aged 85; died, July 22, in Washington, D. C., of hypertensive heart disease and pulmonary edema.

Irvin Rue Peter, Wallace, Mo.; Northwestern Medical College, St. Joseph, 1886; Jefferson Medical College of Philadelphia, 1891; aged 75; died, July 23, of cerebral embolism.

Albert Allen Absher ✱ Sibley, Ill.; College of Physicians and Surgeons of Chicago, 1893; aged 71; died, July 20, in the Brokaw Hospital, Normal, of cerebral hemorrhage.

Charles Barton Lawrence, Columbia, Mo.; University of Louisville (Ky.) Medical Department, 1890; aged 73; died, May 18, following an operation on the prostate.

William Frederick Roberts, Delaware, Ohio; Harvard Medical School, Boston, 1902; aged 66; died, June 30, of cerebral hemorrhage and fracture of the hip.

Benning M. Kennon, McRae, Ga.; Atlanta Medical College, 1889; member of the Medical Association of Georgia; aged 78; died, June 29, of diabetes mellitus.

William Murray Winn ✱ St. Louis; National University of Arts and Sciences Medical Department, St. Louis, 1918; aged 46; died, May 14, of mitral stenosis.

Arthur Leon Brown, Riverside, Calif.; Medical College of Ohio, Cincinnati, 1896; served during the World War; aged 67; died, June 24, of coronary occlusion.

Thomas Roi Barney, San Francisco; Cooper Medical College, San Francisco, 1903; aged 70; died, May 16, of chronic myocarditis and arteriosclerosis.

Wilfred Joseph Johnston, Sarasota, Fla.; University of Toronto Faculty of Medicine, 1916; aged 47; died June 29, in Philadelphia of heart disease.

Patrick Otis Lowe, Laneville, Texas; University of Texas School of Medicine, Galveston, 1913; aged 50; died, July 9, of carcinoma of the left cheek.

John William Shook, Canal Winchester, Ohio; Columbus Medical College, 1885; aged 87; died, July 16, in Lancaster of lung abscess.

H. L. Park, Union City, Tenn.; College of Physicians and Surgeons, Baltimore, 1886; aged 85; died, July 11, of chronic myocarditis.

Gilbert Franklin Buxton, Baltimore; College of Physicians and Surgeons, Baltimore, 1907; aged 63; died, May 6, of myocarditis.

James W. Ryan, Coffeyville, Kan.; Medical College of Ohio, Cincinnati, 1888; aged 73; died, June 8, in Dallas, Texas.

Robert Burton Armstrong, Papillion, Neb.; Medical Department of Omaha University, 1894; aged 75; died, June 28.

David C. Posey ✱ Christiana, Pa.; Baltimore Medical College, 1908; aged 60; died, July 6, of coronary thrombosis.

Jesse B. Davis, Chicago; American Medical College, St. Louis, 1883; aged 80; died, July 29, of arteriosclerosis.

Correspondence

LACK OF EVIDENCE FOR CHRONIC CARBON MONOXIDE POISONING

To the Editor:—Whether there really is such a disease as that termed "chronic carbon monoxide poisoning," as a consequence of prolonged or repeated exposure to small amounts of the monoxide and continuing after the exposure is stopped, is very doubtful. Certainly its importance in many cases is less medical than legal and financial as a basis for claims for damages to be awarded by a compensation commissioner or a court of law. There is a large literature presenting numerous cases, described with clinical fulness and accuracy in respect to the symptoms of the disorder but with little or no evidence that the patients had ever been exposed to any significant extent to carbon monoxide.

If, then, numerous false claims are not to be bolstered by such papers, it is essential that writers on this subject should be required to report evidence as to the analytic method by which the amount of carbon monoxide in the air or in the blood was determined, how much was found and how long the exposure continued. Such a requirement would at once deprive the greater part of the literature in this field of all evidential value.

The lack of such evidence is exemplified in a paper by Drs. Beck, Schulze and Suter entitled "Carbon Monoxide—A Domestic Hazard with Especial Reference to the Problem in West Virginia" (THE JOURNAL, July 6, p. 1) as well as by the previous papers by Dr. Beck and his associates there cited. Among the conditions alleged to be due to carbon monoxide are diseases of the central nervous system, cardiovascular system and gastrointestinal system, and specifically encephalitis, epilepsy, multiple sclerosis, tetany, petechial hemorrhages, coronary thrombosis, cardiac dilatation, hemiplegia, syncopal attacks, emotional episodes, visual disturbances, various forms of neuroses and psychoses, some with marked mental deterioration, ataxia, myalgia, muscular twitching, stiff and painful joints and angina pectoris. This is not the entire list of disorders alleged to be induced by repeated exposure to low concentrations of carbon monoxide but is sufficient in view of the fact that all these disorders are known to occur from other causes, and that in this paper no real evidence is presented that in the cases reported carbon monoxide was involved to any appreciable degree. Such involvement or causation is assumed merely on the basis of blood counts somewhat above normal in some cases and below normal in others: conditions that may also occur apart from carbon monoxide.

It appears that in West Virginia natural gas is extensively used for domestic cooking and heating, that the appliances in which the gas is burned are often without flue connections, and that during cold weather windows are rarely opened either by day or by night. Now natural gas is methane, which is no more poisonous than nitrogen, the chief constituent of air. Natural gas contains no trace of carbon monoxide. With a good supply of air to a flame of methane the gas burns with no production of carbon monoxide. What is produced is heat, water vapor and an atmosphere that is stuffy and unhealthful. No appreciable decrease of oxygen or increase of carbon dioxide in the air of the room so heated is usually involved. If the occupants exhibit poor health, it is fair to assume that bad ventilation may be a factor. But without positive demonstration of the presence of carbon monoxide by analysis of the air or the blood, no inference of "chronic carbon monoxide poisoning" is justifiable. Certainly not to the extent of the varied disorders listed.

The proverbial belief in regard to "chronic carbon monoxide poisoning" had its chief origin in the cases of prolonged asphyxiation by city gas, which were once common but are now rare. The small gas lighting fixtures then used in bedrooms were easily turned on accidentally, and as the small stream of gas flowed into the room the victim was exposed to a gradually increasing concentration of carbon monoxide. Often it was insufficient to cause immediate death by acute asphyxia but was sufficient over many hours to induce lasting damage to the brain. Today carbon monoxide asphyxiation commonly occurs in garages and kitchens and is generally acute and brief. Since the introduction of inhalation resuscitation, the large majority of cases fall into one or other of two classes: that in which the victims die immediately and that in which they recover rapidly and completely. But even in the cases of permanent damage that do still occasionally occur, the term "chronic carbon monoxide poisoning" is a misnomer. Before the patient comes out of coma the last trace of carbon monoxide has been eliminated from his blood. A better term would be permanent postasphyxial myelitis.

The question remains whether repeated exposures to amounts of carbon monoxide only sufficient to induce a headache but falling considerably short of rendering a man unable to stand or drive a car can do more than impair health temporarily. At present the probability is that termination of the unhealthful condition is always rapidly followed by return to health. Certainly the men who drive taxis in our larger cities and those who work in repair shops, although liable to all the disorders mentioned by Dr. Beck and his co-authors, have not yet been shown to be appreciably more liable than the rest of the population. We all breathe some carbon monoxide nearly every day of our lives.

The expression "chronic poisoning" can be properly applied only to the action of substances that are protoplasmic poisons and that may accumulate in the body. Lead is a typical example. Carbon monoxide, on the contrary, is rapidly eliminated by respiration, and its action while in the blood is wholly due to the temporary displacement of oxygen. The anoxia due to carbon monoxide acts essentially as does that induced by the low pressure of the air (i. e. oxygen deficiency) at great altitudes. The headache of mountain sickness and that of a temporary 20 or 30 per cent saturation of the blood with carbon monoxide are identical. Yet, given time for compensatory physiologic adjustments—of which an increase of red corpuscles in the blood is one—men are quite healthy at Denver and even on Pike's Peak.

It would be a valuable service if the board of health in one of our cities would institute an investigation by a gas analyst and a clinician jointly with regard to the amounts of carbon monoxide in the atmosphere in as many automobile repair shops as possible and as to the health and symptoms of disease of the mechanics who work in them. Experiments in this laboratory have shown that in dogs repeated asphyxiations of the severest character—just short of death—are required to induce any considerable impairment of health.

YANDELL HENDERSON, PH.D., New Haven, Conn.

[This letter was referred to Dr. Beck, who replies:]

To the Editor:—The criticism offered by Dr. Yandell Henderson, of our article in THE JOURNAL, July 6, affords me an opportunity to discuss some phases of the subject which have been misconstrued.

On some of the most salient points I agree with Dr. Henderson. This is with respect to the use of the term "chronic carbon monoxide poisoning." My associates and I have endeavored to make a clear distinction between what we regard as simple carbon monoxide anoxemia and the more chronic forms with organic changes occurring as residual manifestations of acute asphyxiation or the secondary effects of severe and protracted (chronic) anoxemia.

I have frequently called attention to the fact that the term "chronic carbon monoxide poisoning" was misleading. In an article on slow carbon monoxide asphyxiation in THE JOURNAL, Sept. 26, 1936, I made the following statement: "Chronic carbon monoxide anoxemia would designate the true nature of the condition better than 'chronic carbon monoxide poisoning,' as the latter is not only a misnomer but is actually misleading." If Dr. Henderson will read the article carefully in which he criticizes the use of the term "chronic carbon monoxide poisoning," he will not find mention of the words "poison" or "poisoning" or any reference to the term "chronic carbon monoxide poisoning."

However, I have used it in my previously published articles. This was done for the reason that the average physician is not familiar with any other term designating the condition. Moreover, articles on the subject, either in textbooks or in medical journals, invariably appear in the index under the caption "carbon monoxide poisoning." In the *Index of the Surgeon General's Library,* twenty finely printed pages are devoted to the bibliography on carbon monoxide. In eighteen of these pages references are listed specifically under the heading of "Carbon Monoxide Poisoning." The list includes extensive bibliographies under "chronic carbon monoxide poisoning" covering the English, French, German, Italian and Spanish literature. In my observations extending over many years, I discovered nothing new clinically on the subject and failed to find a single phenomenon which had not been previously fully described.

The bibliography on "Carbon Monoxide Poisoning: Manifestations, Mental and Neurological," covers a full page, and the pathology another page. A careful review of the literature furnishes ample evidence that serious damage to such structures as the brain, heart and other organs may result from carbon monoxide gas and that a variety of clinical syndromes naturally develop on such a pathologic-anatomic basis. The underlying pathologic changes occurring in the brain and central nervous system give rise to the many "conditions" which Dr. Henderson states are alleged to be due to carbon monoxide. It is well established that many of the "conditions" referred to—encephalitis, epilepsy, hemiplegia, syncopal attacks, emotional episodes, visual disturbances, neuroses, psychoses, mental deterioration and ataxia—are not disease entities but merely symptoms which, as a composite, express a single encephalitic or encephalomyelitic process.

In our series of 150 cases studied, thirteen exhibited definite signs and symptoms of chronic encephalitis, including practically the entire list mentioned. Here again, in this group of cases, I am somewhat in agreement with Dr. Henderson when he acknowledges that carbon monoxide does produce cerebral lesions and suggests as a better term "permanant postasphyxial myelitis." However, from a careful review of the literature and from our own clinical observations covering a period of twenty years, I would prefer to use the term "carbon monoxide or postasphyxial encephalitis," and, to make it more inclusive, "encephalomyelitis."

The symptoms referable to the heart can be explained on the same pathologic-anatomic basis, the result of anoxemia. It is difficult to explain without attributing the cause to carbon monoxide why among 150 persons who were unquestionably exposed to the gas over long periods encephalitis occurred in one in every twelve and epilepsy in one in every seventeen patients admitted, when among those not exposed encephalitis occurred in only one in 198 and epilepsy in one in 148. These statistics are compiled from our own clinic records and deserve serious consideration.

As syndromes resulting from the effects of carbon monoxide can best be determined by careful clinical investigation, our approach to the subject has been primarily from the clinical side, and the results obtained have been correlated as far as possible with laboratory studies. The latter, exclusive of the routine urinalysis, blood count and serologic tests, included in selected cases the quantitative determination of carbon monoxide in the air by gas analysis or by the Mines Safety Appliance Company's carbon monoxide indicator.

For the mere detection of gas, pallidium chloride was frequently used. The determination of carbon monoxide in the blood was made in some of our cases by the pyrotannic acid method (Sayers and Yant); in others, in which a more accurate quantitative determination was desired, the Van Slyke method was employed.

However, when one considers that the episodes causing the damage have usually occurred from exposures many months or even years before, the diagnostic significance of carbon monoxide in the air or in the blood dwindles to naught in these chronic or residual forms. Many of the cases studied were of years' duration. All the patients gave a history of one or repeated daily exposures with symptoms characteristic of anoxemia and of obtaining relief in fresh air, improvement of heating conditions or change of residence. In those cases presenting residual manifestations a history of anoxemia antedated the onset of symptoms.

Realizing the valuable services a board of health could render in instituting an investigation by a gas analyst and clinician conjointly, we have already taken advantage of the opportunity and concluded an investigation which was even broader in scope but confined largely to the study of the domestic problem. The survey was conducted under a grant provided for the purpose and was sponsored by the Research Committee of the University of West Virginia, aided by such agencies as the public utilities, the State Department of Health of West Virginia, the West Virginia Geological Survey, Cities Service Company of New York and our diagnostic clinic. An analysis of the natural gas from the wells was furnished by the state geological department. The condition of gas consuming appliances, the facilities for proper ventilation and the determination of the amount of carbon monoxide present were investigated by sanitary and gas engineers. Blood examinations for carbon monoxide saturation were made by Mr. Anderson of the Johns Hopkins University, using the Van Slyke method. Electrocardiographic studies were also made. The time of exposure, the length of residence in gas heated homes, the health of the occupants and many other details were included in the survey.

The results, which will be published later, furnish convincing proof of the correctness of our assertion and that we have made no unwarranted claims in stating that carbon monoxide may produce chronic states of ill health in the nature of clinical syndromes such as we have described.

HARVEY G. BECK, M.D., Baltimore.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

LITTLE HAZARD FROM ENAMELWARE

To the Editor:—Have there even been any ill effects reported from the chipped particles of enamel used in surfacing kitchen utensils? This enamelware often chips and I have been asked whether the ingestion of even inconsiderable amounts might prove to be harmful.

M.D., Ohio.

ANSWER.—Formulas for vitreous enamels vary extensively, but in the main the constituents appear to contain metallic silicates. Metallic oxides are employed to impart desired colors such as cobalt for blue, cobalt and manganese for violet, copper and chromium for green. Lead and arsenic formerly enjoyed wide use but for kitchen utensils have to some extent disappeared. Theoretically these enamels contain poisonous ingredients, but practically chemical injuries are not to be anticipated from any proper usage of these utensils or from the ingestion of small flakes of enamelware. High insolubility even in gastrointestinal juices assures comparative safety. Occasional claims are made of mechanical injuries from the cutting or irritating action of enamel flakes much akin to ingested glass fragments. As a rule such claims are without merit. Large scales such as might nick the esophagus are likely to be detected in the mouth. The mass action of a few small particles is so slight as to make harm improbable. The importance formerly attached to this class of foreign bodies in the gastrointestinal tract, and particularly small glass fragments, probably exaggerated the extent of any real harm produced.

AIR INSUFFLATIONS AND OXYGEN FOR TUBERCULOUS COLITIS

To the Editor:—Could you suggest a treatment other than rest, diet and vitamin therapy for a 3 months old tuberculous colitis in a patient with a long-standing but healing pulmonary tuberculosis? It has come to my attention that oxygen or air insufflations have been used in many cases with success. If this is so, could you outline the procedure or give me some references on the subject?

M.D., South Carolina.

ANSWER.—Pneumoperitoneum or oxyperitoneum has been used by many physicians for patients who have tuberculosis of various parts of the digestive tract, including the colon. The air or oxygen may be introduced into the peritoneal cavity by an ordinary artificial pneumothorax apparatus. The needle is introduced approximately two fingerbreadths to the left and 1 inch below the umbilicus. One does not obtain a negative manometer reading as in the pleural cavity; in fact, there usually is no oscillation when the needle first enters the peritoneal cavity. When the needle is introduced slowly through the abdominal wall, some resistance is met until it enters the peritoneal cavity. After the needle is inserted one should draw back on the plunger of the syringe to make sure that the tip of the needle is not in a blood vessel, as gas embolus has occasionally occurred during introduction of air into the peritoneal cavity. From 300 to 500 cc. of air is allowed to flow into the peritoneal cavity. The absorption rate is fast when oxygen is employed, and therefore the treatment should be repeated once or twice each week. Examination of the abdomen with the fluoroscope is a reasonably accurate means of determining when a sufficient amount of air or oxygen is present, and the frequency of refills can therefore be determined in this manner. The treatment may be continued as long as it seems beneficial, as indicated by relief from symptoms. This is not a curative procedure, but many patients state that it gives them considerable relief from symptoms.

It has been suggested that oxygen be introduced directly into the small intestine through a duodenal tube or into the colon through a rectal tube. When this is done great care should be taken to prevent the entrance of too much oxygen at one time, as it may cause severe pain. There is no satisfactory evidence available as to the benefit of such treatment, and therefore it should be discouraged unless further experimental work proves it to be of value.

In 1938 Fine and his co-workers (*Ann. Surg.* **107**:1 [Jan.] 1938) showed that the inhalation of 100 per cent oxygen would decompress the distended abdomen after surgical operation within twelve to twenty-four hours. The best results were obtained when the Wangensteen method of suction was employed in conjunction with the inhalation of oxygen. Fine's work has been confirmed by Boothby (THE JOURNAL, Aug. 5, 1939, p. 477), Lovelace (*Minnesota Med.* **22**:117 [Feb.] 1939) and Mayo (*West Virginia M. J.* **35**:520 [Nov.] 1939). Indeed they, with Bulbulian, have devised special masks which provide for the inhalation of oxygen at any desired percentage up to 100. They have found this of great value following surgery and also in peritonitis. They believe it is also of value in certain infections, particularly those produced by anaerobic organisms. When pure oxygen is inhaled, the oxygen content of arterial blood is increased from 10 to 15 per cent. When the patient inhales 100 per cent oxygen it has been shown that the nitrogen quickly disappears from the lungs, the nitrogen in the blood is eliminated by way of the lungs in a few minutes, that in the tissues is given up to the blood, which in turn throws it off in the lungs, and thus more oxygen is permitted to enter the tissues.

There is no reason to suspect that the inhalation of 100 per cent oxygen has any harmful effect on tubercle bacilli; indeed, they are aerobic. Nevertheless the patient with intestinal tuberculosis may suffer from distention and he may also have peritonitis, and therefore he may be relieved by the Wangensteen suction method plus the administration of 100 per cent oxygen. It has been shown that 100 per cent oxygen may be breathed for forty-eight hours without any evidence of irritation of the lungs. However, beyond this time it is thought best to decrease the concentration. Here, again, one has not a curative but only a palliative measure.

SKELETAL DEMINERALIZATION AND THEELIN (ESTRONE)

To the Editor:—Roentgenologists observe that most people who fracture their hips and bodies of the vertebrae are women past the menopause. The thought comes that the cessation of ovarian function might influence calcium metabolism. If that is true, would a hormone like theelin help in the deposition of lime in the bones?

Philip J. Lukens, M.D., Ambler, Pa.

ANSWER.—There is no well substantiated evidence that theelin is of value in the deposition of lime in the bones of an otherwise normal person either before or after the menopause. Spontaneous fractures of the hips or vertebral bodies are extremely rare and usually secondary to specific bone destructive lesions, such as neoplasms. The fact that fractures of this type in elderly persons are more common in women than in men can probably be explained on the basis that men, on the average, are physically more active than women not only late in life but throughout adult life. There is some evidence that atrophy of the skeleton, which is common in elderly persons and is called by various terms, including senile osteoporosis, results from years of ingestion of diets low in calcium content, from faulty absorption of calcium salts from the gastrointestinal tract, or from the wasting which is always associated with a decrease in the physical activity of the individual. It is quite possible that a combination of these three causes may explain the extreme demineralization of the human skeleton in elderly women, but it is also found not infrequently in elderly men. The actual increase in incidence of fractures in women over the men can be explained best by the fact that women fall much more often, and in falling they are not as adept as men, who have been more active physically, in arresting the fall with their hands.

IS ACETOPHENETIDIN HABIT FORMING?

To the Editor:—I should like to know whether or not there have been any cases reported of addiction to phenacetin. Can this drug be considered a habit forming drug and are there ever "withdrawal symptoms" associated with the discontinuance of this drug after one has taken it a while?

M.D., Georgia.

ANSWER.—The answer depends on one's concept of "drug habit" and "withdrawal symptoms." There are infinite gradations between the "habit" of chewing gum, at one extreme, and heroin addiction at the other. "Withdrawal symptoms" similarly grade insensibly from mild desire and discomfort to intense craving and physical collapse. Most people take acetophenetidin, acetanilid or acetylsalicylic acid only occasionally and for definite indications such as headache, pain or colds. Those who have habitual headache are inclined to take drugs habitually and may develop chronic poisoning, especially cyanosis, but they can stop without marked craving or other withdrawal symptoms. A few individuals appear to feel a positive elation or even inebriation, and these are more likely to use the drugs to excess and to feel the withdrawal more keenly and may object quite vigorously, especially if they have a neurotic or hysterical temperament; but violent reactions are rare and may be charged to inherent nervous irritability more than to these drugs.

MELTING CAPSULES

To the Editor:—In the following prescription used for certain cases of hypertension the patient has had difficulty in preserving the capsules without melting. However, this has been overcome by putting a small amount of absorbent cotton in the container and keeping the capsules in a cool place. The pharmacist informs me that the ingredient responsible for this is calcium iodobehenate, and the decomposition can be controlled by putting this ingredient inside a separate capsule, which is then placed inside the regular capsule. I would appreciate knowing if this procedure can be eliminated or, if not, do you have any suggestions to make in regard to compounding the mixture without having it decompose? The prescription is as follows: soluble phenobarbital 15 grains (1 Gm.), theophylline with ethylenediamine 60 grains (4 Gm.), calcium iodobehenate 90 grains (6 Gm.). Mix and divide into 45 capsules.

M.D., West Virginia.

ANSWER.—The softening of the capsules by this prescription mixture might be prevented by the addition of kaolin or powdered althea. These are both inert. Or sodium iodide in a correspondingly smaller amount could be substituted for the calcium iodobehenate with the same therapeutic results. If the capsules are taken with a full glass of water or after a meal, that quantity of sodium iodide given in a solid form would not be irritating. In any case the capsules should be kept in a cool dry place.

TRAUMA AND MYXOSARCOMA

To the Editor:—Please give me information regarding the possibility of trauma causing, exacerbating or hastening the development of a myxosarcoma of the upper part of the leg in one who uses this portion of his leg in climbing poles and the like. Where might I find authoritative information on this subject? Could an acute minor injury cause a rapid progression of such a growth? The tumor seemed to be in the muscles. Could it possibly be a rhabdomyoma rather than a myxosarcoma?

W. L. Hartman, M.D., South Orange, N. J.

ANSWER.—There is no evidence that trauma can act as the sole causative factor in the development of a myxosarcoma of the upper part of the leg. There have been cases in which the evidence seemed to indicate that trauma has acted as a contributing factor in the development of such a lesion. There is an extensive literature on the relation between trauma and tumors. This can be readily found by reference to the *Quarterly Cumulative Index Medicus*. It is unlikely that an acute minor injury would cause a rapid development of such a growth. As a rule it is not difficult to distinguish microscopically between rhabdomyosarcoma and myxosarcoma.

MAPHARSEN AND LOOSE STOOLS

To the Editor:—I should like to know whether or not the full benefit is obtained from mapharsen by a patient in whom neoarsphenamine causes vomiting and in whom mapharsen causes from one to three or four loose and profuse watery stools. I am afraid I am losing the benefit of the drug, and although I started out using this drug every fourth day, I do not seem to obtain any better results by giving it at weekly intervals. Should I use a smaller dose than 0.06 Gm. for a man weighing 185 pounds (84 Kg.)?

M.D., West Virginia.

ANSWER.—If the patient has vomiting following neoarsphenamine, it probably was wise to change to mapharsen. It is possible that he is slightly arsenic sensitive, but as long as he has nothing worse than three or four loose and profuse watery stools there seems to be no reason why this treatment should not be continued. Probably it would not be wise to use the drug every fourth day, however. Since the man weighs 185 pounds, the dose of 60 mg. given about every five days or once a week for a series of ten injections might be advisable. He might also be given some preparation which would have a tendency to render him a little costive for ten or twelve hours after the injection. It is not felt that the patient is losing the benefit of the drug simply because he has a few loose, watery stools.

COLON AFTER COLOSTOMY

To the Editor:—From several months to several years after a permanent colostomy is performed, what happens to the integrity of the colon as far as function, musculature and size of the lumen are concerned?

M.D., New York.

ANSWER.—There have been no studies reported as to the function and structure of the colon after permanent colostomy, probably because this procedure is performed usually for the relief of obstruction from carcinoma and the patients do not live long enough to allow such detailed observations. One patient, examined a year after colostomy, showed no significant change in the distal colon. A second patient nine years after colostomy likewise had a normal rectum. Operation several years after ileostomy in chronic ulcerative colitis has revealed, in some cases, a narrowing of the large bowel, the lumen being from one fourth to one third its usual size. It is known experimentally that months after permanent colostomy in monkeys there is a distinct atrophy of the distal bowel. Patients with colostomy frequently pass small grayish masses by rectum, doubtless representing accumulations of mucus and epithelial débris. This was noted in a patient eighteen years after a colostomy by Franz (*Ztschr. f. Geburtsh. u. Gynäk.* **85**:598, 1923) and apparently mistaken for "recurring tumor." There is no evidence available as to the microscopic structure of the musculature of the colon after permanent colostomy.

DIET OF MOTHER AND FETAL SIZE

To the Editor:—I have never been able to settle to my satisfaction the controversy as to whether restriction of diet during pregnancy will affect the weight of the baby. Will you discuss this? Furthermore, in conjunction with this question, is it possible by any means to govern the size of the unborn baby's head and is it true that the weight of the baby and the size of the baby's body are relatively unimportant since the body follows easily wherever the head can go?

W. A. Dawson, M.D., Dalhart, Texas.

ANSWER.—It is probably true that the consensus of obstetricians is that the bulk of the baby can be limited. This is done by restricting the sugars and starches and some restriction of fluid during the last trimester of pregnancy. Care should be exercised that the actual requirements of a balanced diet are not disturbed. The restriction of food does not affect the length of the baby or the size of its head. These are probably more largely determined by heredity. It is not true that the weight and size of the baby are unimportant, because delivery is often complicated by bulk and excessive size of the bony structure as well as by a large head.

EFFECTS OF CHORIONIC GONADOTROPIN

To the Editor:—Are there any remarkable side effects from the therapeutic use of chorionic gonadotropin in either men or women?

M.D., Idaho.

ANSWER.—Chorionic gonadotropin is the preparation from the urine of pregnant women which is known to stimulate the interstitial cell tissue of the testicles and to cause atresia or a type of atrophy of the ovarian follicles in women. It apparently maintains a corpus luteum after this has once formed in the course of the normal cycle of ovarian activity in women. These fundamental reactions are the basis for its therapeutic use. Except for slight local reactions in some instances there are no other demonstrable effects of such chorionic gonadotropin in human beings. A detailed Council report on this material will be found in THE JOURNAL, Feb. 10, 1940, page 487.

INTRAVENOUS DEXTROSE SOLUTION NOT HARMFUL TO KIDNEYS

To the Editor:—Is there any evidence tending to show that 50 cc. of 50 per cent dextrose injected intravenously would be detrimental to kidneys already seriously impaired?

James T. Quattlebaum, M.D., Columbia, S. C.

ANSWER.—There is no evidence to indicate that 50 cc. of 50 per cent dextrose injected intravenously causes any damage to diseased kidneys. Rapid injection of several times this amount might cause sufficient acute circulatory disturbance to affect renal blood flow, but even this is a rather remote possibility.

PELVIC DIAMETERS

To the Editor:—Where can I find references to correlation between the bicristal and bitrochanteric diameters and body heights? I am particularly interested in articles which will give this information by chronological age. I should like to have information on both male and female pelves.

M.D., New York.

ANSWER.—Information of this nature exists to some extent but is scattered and has not as yet been summarized. The correspondent should consult references to measurements on the pelvis, and on children and adolescents, in the *Index Catalogue of the Library of the Surgeon General's Office*, U. S. Army, and in the *Quarterly Cumulative Index Medicus*.

"BLINDNESS FROM HEMORRHAGE INTO OPTIC NERVE"

To the Editor:—With regard to your reply to the query about blindness from hemorrhage into the optic nerve canal (The Journal, August 3, p. 404) I have it on the authority of Foster Moore (Medical Ophthalmology 1922) that hemorrhage into the sheath of the optic nerve does not cause blindness. A better explanation of this case would be damage to the nerve by a fracture through the optic foramen. In that event the prognosis was bad from the start and evacuation of the blood or any other operation would not have helped.

E. C. Ellett, M.D., Memphis, Tenn.

Medical Examinations and Licensure

COMING EXAMINATIONS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, August 24, page 636.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 17-19. Sec., Dr. J. N. Baker, 519 Dexter Ave., Montgomery.

ALASKA: Juneau, Sept. 3. Sec., Dr. W. W. Council, Box 561, Juneau.

ARIZONA: *Written.* Phoenix, Oct. 1. *Reciprocity.* Phoenix, Oct. 2. Sec., Dr. J. H. Patterson, 326 Security Bldg., Phoenix.

ARKANSAS: *Regular.* Little Rock, Nov. 7-8. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, Nov. 7. Sec., Dr. Clarence H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), San Francisco, Oct. 2. *Written examination.* Sacramento, Oct. 21-24. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

COLORADO: Denver, Oct. 1-4. Applications must be on file not later than Sept. 17. Sec., Dr. Harvey W. Snyder, 831 Republic Bldg., Denver.

CONNECTICUT: *Written.* Hartford, Nov. 12-13. *Endorsement.* Hartford, Nov. 26. Sec., Dr. Thomas P. Murdock, 147 W. Main St., Meriden. *Homeopathic.* Derby, Nov. 12-13. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: July 8-10. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA, Washington, Nov. 11-12. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Tampa, Nov. 18-19. Sec., Dr. W. M. Rowlett, Box 786, Tampa.

GEORGIA: Atlanta, Oct. 8-9. Joint-Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta.

HAWAII: Honolulu, Jan. 8-11. Sec., Dr. James A. Morgan, 48 Young Building, Honolulu.

IDAHO: Boise, Oct. 1. Dir., Bureau of Occupational License, Mr. H. B. Whittlesey, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Oct. 1-3. Superintendent of Registration, Mr. Lucien A. File, Springfield.

INDIANA: Indianapolis, June 17-19. Sec., Board of Medical Registration and Examination, Dr. J. W. Bowers, Citizens Trust Building, Fort Wayne.

KANSAS: Topeka, Dec. 10-11. Sec., Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

KENTUCKY: Louisville, Dec. 3-5. Sec., State Board of Health, Dr. A. T. McCormack, 620 Third St., Louisville.

MAINE: Portland, Nov. 12-13. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, Dec. 10-13. Sec., Dr. John T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, Nov. 12-14. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MICHIGAN: Lansing, Oct. 9-11. Sec., Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing.

MINNESOTA: Minneapolis, Oct. 15-17. Sec., Dr. Julian F. Du Bois, 350 St. Peter St., St. Paul.

MISSISSIPPI: *Reciprocity.* Jackson, December. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: *Reciprocity.* Helena, Sept. 30. *Written.* Helena, Oct. 1-2. Sec., Dr. S. A. Cooney, 216 Power Block, Helena.

NEW JERSEY: Trenton, Oct. 15-16. Sec., Dr. Earl S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: Santa Fe, Oct. 7-8. Sec., Dr. Le Grand Ward, 135 Sena Plaza, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 23-26. Chief, Bureau of Professional Examinations, Mr. Herbert J. Hamilton, 315 Education Building, Albany.

NORTH CAROLINA: *Reciprocity.* Durham, Dec. 3. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, Jan. 7-10. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OKLAHOMA: Oklahoma City, Dec. 11. Sec., Dr. James D. Osborn Jr., Frederick.

OREGON: *Reciprocity.* Portland, October. *Written.* Portland, Jan. 14-16. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: Philadelphia, January. Dir., Bureau of Professional Licensing, 358 Education Bldg., Harrisburg.

PUERTO RICO: San Juan, Sept. 3. Sec., Dr. O. Costa Mandry, Box 3854, Santurce.

RHODE ISLAND: Providence, Oct. 3-4. Sec., Division of Examination, Dr. Robert M. Lord, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Nov. 12. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Pierre, Jan. 21-22. Dir., Medical Licensure, Dr. J. F. D. Cook, Pierre.

TEXAS: Austin, Nov. 25-27. Sec., Dr. T. J. Crowe, 918-920 Mercantile Bldg., Dallas.

VERMONT: Burlington, Feb. 11. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, Dec. 4-6. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WEST VIRGINIA: Morgantown, Oct. 31-Nov. 2. Sec., Public Health Council, Dr. Arthur E. McClue, State Capitol, Charleston.

WISCONSIN: Madison, Jan. 14-17. Sec., Dr. H. W. Shutter, 425 E. Wisconsin Ave., Milwaukee.

WYOMING: Cheyenne, October. Sec., Dr. M. C. Keith, Capitol Building, Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Tucson, Sept. 17. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson.

COLORADO: Denver, Sept. 16-17. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: New Haven, Oct. 12. Chairman, State Board of Healing Arts, Dr. Charles M. Bakewell, 1945 Yale Station, New Haven.

DISTRICT OF COLUMBIA: Washington, Oct. 21-22, Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

FLORIDA: Gainesville, Nov. 1. Applications must be on file not later than Sept. 16. Sec., Dr. John F. Conn, John B. Stetson University, De Land.

IOWA: Des Moines, Oct. 8. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Building, Des Moines.

MINNESOTA: Minneapolis, Oct. 1-2. Sec., Dr. J. Charnley McKinley, 126 Millard Hall, University of Minnesota, Minneapolis.

NEBRASKA: Lincoln, Oct. 1-2. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, 1009 State Capitol Bldg., Lincoln.

OREGON: Portland, Oct. 26. Sec., Mr. Charles D. Bryne, State Board of Higher Education, University of Oregon, Eugene.

SOUTH DAKOTA: *Examination.* Yankton, Dec. 6-7. *Endorsement.* Dec. 21. Sec., Dr. Gregg M. Evans, Yankton.

WISCONSIN: Madison, Sept. 21. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

Mississippi June Report

Dr. R. N. Whitfield, assistant secretary, State Board of Health, reports the written examination for medical licensure held at Jackson, June 26-28, 1940. The examination covered twelve subjects and included ninety-six questions. An average of 75 per cent was required to pass. Forty-two candidates were examined, all of whom passed. Twenty-five physicians were licensed to practice medicine by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
The School of Medicine of the Division of the Biological Sciences		(1937)	88
University of Louisville School of Medicine		(1940)	83.4, 85, 88.7
Tulane University of Louisiana School of Medicine	82.9, 84.5, 84.8, 85, 85.4, 85.5, 85.8, 86.2, 86.4, 86.6, 86.8, 87, 87.6, 87.9, 88, 88, 88.5, 88.8, 89, 89.5, 89.5, 89.7, 90.4, 90.6, 91.5	(1940)	80.5,
St. Louis University School of Medicine		(1940)	86.3
Jefferson Medical College of Philadelphia		(1940)	89
University of Tennessee School of Medicine		(1938)	85.7,
	(1939) 87, 87.4, 88.4, (1940) 86.1, 87.4, 87.8, 88.7		
Vanderbilt University School of Medicine		(1940)	85.7
Baylor University College of Medicine		(1939)	85.7

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1936)	Louisiana,
	(1939) Arkansas		
University of Georgia School of Medicine		(1934)	Georgia
Northwestern University Medical School		(1939)	Wisconsin
State University of Iowa College of Medicine		(1927)	Iowa
University of Kansas School of Medicine		(1937)	Kansas
Louisiana State University School of Medicine		(1936)	Louisiana
Tulane University of Louisiana School of Medicine	(1934), (1937, 2) Louisiana, (1938) Georgia	(1924),	
Washington University School of Medicine		(1939)	Missouri
University and Bellevue Hospital Medical College		(1900)	New York
University of Oklahoma School of Medicine		(1934)	Oklahoma
University of Tennessee College of Medicine	(1937), (1938, 5) Tennessee	(1931), (1933),	
University of Tennessee Medical Department		(1910)	Tennessee
Medical College of Virginia		(1932)	N. Carolina

Kentucky June Report

Dr. A. T. McCormack, secretary, State Board of Health of Kentucky, reports the written examination for medical licensure held at Louisville, June 6-8, 1940. The examination covered eleven subjects and included 110 questions. An average of 70 per cent was required to pass. Sixty-eight candidates were examined, all of whom passed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Louisville School of Medicine		(1937)	81,
	(1938) 80, (1940) 76, 77, 77, 78, 78, 78, 78, 79, 79, 79, 79, 79, 79, 80, 80, 80, 80, 80, 80, 80, 80, 80, 80, 81, 81, 81, 81, 81, 81, 81, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 83, 83, 83, 83, 83, 83, 83, 83, 84, 84, 84, 84, 84, 84, 84, 85, 85, 85, 85		
University of Cincinnati College of Medicine		(1939)	85
University of Pennsylvania School of Medicine		(1937)	81,
	(1940) 84		

Twenty-two physicians were licensed to practice medicine by reciprocity and one physician so licensed by endorsement from February 8 through July 13. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University School of Medicine		(1938)	New Jersey
Northwestern University Medical School		(1936)	Illinois,
	(1938) California		
The School of Medicine of the Division of the Biological Sciences		(1938)	Maine
University of Illinois College of Medicine		(1939)	Illinois
Indiana University School of Medicine		(1923), (1933)	Indiana
University of Louisville School of Medicine		(1937)	N. Carolina,
	(1938) Tennessee		

Tulane University of Louisiana School of Medicine	(1939)	Louisiana
University of Maryland School of Medicine and College of Physicians and Surgeons	(1934)	Maryland
Harvard Medical School	(1938)	Connecticut
St. Louis University School of Medicine	(1938)	Missouri
Eclectic Medical College, Cincinnati	(1939)	Ohio
University of Cincinnati College of Medicine	(1940)	Ohio
University of Oklahoma School of Medicine	(1936)	Oklahoma
University of Tennessee College of Medicine	(1936, 3), (1937), (1939, 2)	Tennessee

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
University of Louisville Medical Department		(1917)	U. S. Navy

Book Notices

Tuberculosis of Bone and Joint. By G. R. Girdlestone, M.A., B.M., F.R.C.S., Nuffield Professor of Orthopaedic Surgery, Oxford. Cloth. Price, $8.75. Pp. 265, with 161 illustrations. New York & London: Oxford University Press, 1940.

Orthopedic surgeons have long been aware of the apparent difference between the course of the average case of bone and joint tuberculosis in the United States and the same disease treated under similar conditions in the British Isles or on the European continent. Some of the orthopedic surgeons may have developed theories which attempt to explain this. This excellent treatise by Girdlestone is the first completely adequate discussion of the general subject of bone and joint tuberculosis, based on an extensive clinical experience and analyzed by a thoroughly competent clinical observer, which has appeared in the modern literature. The author emphasizes the fact that bone and joint tuberculosis in the United States and Canada has been reduced by as much as 75 per cent through enforced pasteurization of milk and the elimination of tuberculous cattle from the dairy herds in these countries. Less effective measures toward public hygiene in the British Isles and on the European continent are probably the explanation for the fact that the incidence of this disease in children continues to be high. There is also a suggestion that the better results obtained in the treatment of bone and joint tuberculosis by bed rest or plaster cast, without the aid of surgery, in the sanatoriums of Europe may be explained by the fact that the majority of these patients are suffering from the bovine type of tuberculosis, while in America today the disease is, in more than 90 per cent of the cases, produced by the human tubercle bacillus. This tends to bear out a statement occasionally made, but without actual data to substantiate it, that the human tubercle bacillus is more virulent and the disease caused by this organism more difficult to treat and control than that caused by the bovine bacillus. More than the average surgeon in the British Isles and in Europe, Girdlestone has utilized the adjunct surgical treatment and in selected cases has found it to be a most valuable aid in the cure of the disease. He states that "the fibrous ankylosis following conservative treatment is seldom permanently safe from recrudescence, and time alone does not bring safety." This is a statement with which the more widely experienced orthopedic surgeons in America will almost unanimously agree. This text and reference book is well illustrated with reproductions of excellent roentgenograms and photographs. The subject matter is subdivided according to the regions of the body most commonly involved. This is a book which can be safely recommended to physicians and surgeons, to medical students and to all those who are interested in the control of tuberculosis of the bones and joints.

The Challenge of Adolescence. By Ira S. Wile, M.S., M.D. Cloth. Price, $3.50. Pp. 484. New York: Greenberg, Publisher, Inc., 1939.

Many books have been written to serve as textbooks in courses on adolescent psychology, but no volume was written prior to this one with the exception of Stanley Hall's out of date masterpiece which serves to cover the field of adolescence as an important field to the physician and the psychiatrist. While it is true that adolescence blends imperceptibly with childhood and adulthood, the physical changes which accompany it are noticeable and easily defined on the basis of numerous social problems with resultant mental, moral and familial conflicts. Wile has covered this whole aspect of adolescent psychology in modern fashion. The approach is what one would expect when considering the various factors of adolescence. As would be expected, the first chapter is devoted to the explanation and definition of adolescence. Since adolescence is significant in the physical aspect first of all, and the ancillary problems of sexual adjustment and psychosexual evaluation at the same time, the first five chapters are devoted to an explanation of sex as the adolescent sees it and the physical and psychiatric foundation for various concepts. Going on from there, social conflicts and the intellectual and emotional problems which arise in this period are given careful consideration and culminate in a chapter, of deep significance, on unconscious factors in behavior. Naturally these factors are important only as they affect the adolescent's attitude toward the outside world, so that the remaining chapters are devoted to family influences, companions and recreation, religion and morals, economics and vocation, delinquency and crime and an interpretation of the psychologic changes during youth. This chapter is devoted to an examination of neuroses and psychoses of the adolescent, and the book closes with a discussion of politics and ethics with particular reference to youth movements. All in all, this book is a remarkable contribution to the literature of psychiatry and will give not only the psychiatrist but also the physician who wishes to enlighten himself, as well as teachers and others who have problems of adolescence to deal with, a great deal of insight and understanding of the growing youth.

Fourth Saranac Laboratory Symposium on Silicosis: An Official Transcript of the Fourth Saranac Laboratory Silicosis Symposium Held in Connection with the Trudeau School of Tuberculosis at Saranac Lake, N. Y., June 19 to 23, 1939. Edited by B. E. Kuechle, Vice President and Claims Manager, Employers Mutual Liability Insurance Co., Wausau, Wis. Paper. Price, $3. Pp. 379, with 4 illustrations. Wausau, Wisconsin, 1939.

Silicosis is here treated broadly. As most of the basic facts of the etiology, pathology, roentgenology and diagnosis of the disease have been presented in previous symposiums, these topics are covered by relatively brief yet adequate reviews. The importance of the degree and type of exposure and individual variation in response is discussed by Cummings. Gardner explains the pathologic process and the relation of tuberculosis to silicosis. Riddell gives a summary of the clinical appearances in simple silicosis and in silicosis complicated by tuberculosis, emphasizing the importance of the infectious process in the causation of symptoms. Pendergrass covers the subject of pulmonary anatomy in healthy and silicotic individuals, with particular attention to the x-ray appearances. There is a paper by Drinker on the technics and interpretation of dust counts and analyses.

This basic groundwork having been established, the symposium goes on to some special considerations. These include the problem of estimating degrees of disability, for which McCann gives a fairly simple, objective method based on the measurement of vital capacity, a general evaluation of the functions of an examining clinic as distinct from the care of industrial injuries, the incidental abnormalities not related to dust exposure found in the lungs of workers, and the pathologic responses to inert dusts and to mixed dusts.

About half of the book is devoted to the discussion of dust hazards in specific industries, special attention being given to silica but other materials also being mentioned. Dolomite mining is stated to be free from the silicosis hazard unless the dolomite is mixed with sandstone, which is an unusual circumstance. While gypsum has no injurious effect of itself and may actually retard the development of silicosis in exposed workers, there are several minor processes in its preparation which may cause difficulty. These are subject to easy control. Conditions in the production of Portland cement are somewhat similar. Heavy dust concentrations are encountered, but few of the materials have sufficient free silica to be dangerous. Other factors also are operative to reduce the hazard. There is no evidence that either finished cement or its raw materials, as encountered in the industry, have any harmful effect on the lung. There is a very considerable hazard in the granite-cutting industry unless adequate exhaust systems are used. Such installations are feasible for most of the work, but some operations remain in which adequate control is very difficult. In foundries there is pronounced variation in the exposure to silica, depending on the nature of the work and on the amount of dust dispersed. In general there is not as much silicosis as might be expected. The control of tuberculosis by prompt diagnosis and isolation of

open cases is emphasized. Silicosis has been fairly common among hard coal miners but can be controlled by certain modifications of the working methods.

The final fourth of the book is given over to discussion of administrative and legal measures to be taken for the control of the disease. This is gone into in such detail that abbreviation here would do an injustice.

As is inevitable in reports of symposiums, there are a number of differences of opinion among the contributors. Some of these are resolved in the discussions, and in most instances supporting data are given which will allow the reader to arrive at a conclusion of his own. Unfortunately, the papers were not adequately edited. Several of them make pretty dull reading, are unnecessarily long and are sometimes ambiguous. There is an index which is fairly good.

Elementary Pathological Histology. By W. G. Barnard, F.R.C.P., Professor of Pathology, University of London, London. Second edition. Cloth. Price, 10s. Pp. 75, with 181 illustrations. London: H. K. Lewis & Co., Ltd., 1940.

This is an atlas of elementary pathologic histology intended for use on the bench when sections are being examined. It consists of well selected and generally excellently executed photomicrographs with a small number of diagrammatic sketches. Brief descriptions are placed on the pages opposite the illustrations. Each subject is ushered in by a concise and lucid introduction. The first thirty-four pages (one half of the whole book) are given to inflammations, to acute infections and to granulomas, seventeen pages to degenerations, to hypertrophy, to hyperplasia and to vascular disturbances, and the remaining eighteen pages to neoplasms. The book has apparently filled a need in England, as proved by the publication of a second edition. It may prove useful in this country for an elementary course in histopathology. However, it would have to be supplemented in many places, because the selection of the material was obviously arbitrary. The atlas may find another field of application in this country because of the requirement of some knowledge of pathology by the different specialty boards. Many specialists who have been away from school and from pathology for years could find in this book a pleasant and painless introduction to the rudiments of pathologic histology. A few critical remarks will not detract from the value of this, on the whole, well constructed book. One might question the definition of an abscess as a "localized focus of inflammation in the substance of a tissue or organ." One would hardly offer such a definition to a student. Several errors crept in, as "xanthroproteic reaction" and "the cells between these two positions are almost severely affected," both on page 47, or in the index, where hemosiderin is referred to page 18 instead of to page 10. The American student will have to use the term "giant cell tumor" instead of "osteoclastoma (myeloid sarcoma)" (fig. 144) if he expects to be understood by his fellow students, and chorionepithelioma is also better known here than chorioncarcinoma. In view of the fine illustrations and the high quality of the paper and of the binding the price of the book is surprisingly low.

A Study of Experimental Tissue Reactions Following Intravenous Injections of Silica and Other Dusts. By F. W. Simson, M.B., Ch.B., and A. Sutherland Strachan, M.A., B.Sc., M.D. From the Department of Pathology, the South African Institute for Medical Research, Johannesburg. Publications of the South African Institute for Medical Research, No. XLV, Vol. IX. Edited by the Director. Paper. Pp. 95-122, with 25 plates. Johannesburg: The Institute, 1940.

Rabbits were given repeated ear vein injections of saline and aqueous suspensions of exceedingly fine quartz, Rand mine dust, sillimanite, orthoclase, muscovite, rutile, glass and mixtures of mine dust and coal. The total doses varied in animals that did not die prematurely between 60 and 360 mg. of material. The period of observation was likewise variable but for each dust some animals survived well over a year.

The authors note the occurrence of silica shock incident to injecting fine quartz and attribute it to change in the normal hydrogen concentration of the blood serum.

They note the development of typical silicotic lesions in the spleen, liver, lymph nodes and bone marrow on injecting quartz and mine dust and the inert type of reaction caused by the other pure minerals, thus confirming observations made in the Saranac Laboratory, where this method originated. They discovered lesions in the kidneys, pancreas and adrenal glands which the reviewer has not encountered in examining scores of rabbits similarly treated. It is possible that the renal lesions may have been due to the chronic nephritis so common in rabbits, or possibly the high frequency of intercurrent infections (fourteen out of forty-nine rabbits) may have been responsible for these changes and the ones described elsewhere. The reviewer would question the conclusion that this group of changes constitutes evidence of poisoning resulting from circulating soluble silica, since he has failed to observe such changes in rabbits injected with many doses of different sized silica particles.

The absence of pulmonary reaction in animals injected with such fine particles (from 67 to 86 per cent of them 0.8 micron or less in diameter) is a cause for comment, but the reviewer has shown that such fine particles are mechanically carried through the pulmonary capillaries and but few are retained in the lungs. Only when the particles are in excess of 10 microns are many of them held in this organ. The fineness of the dust particles also explains the high frequency of silica shock and the tendency of the silica injections to cause early death. They consider the question of individual susceptibility but conclude that it is not a factor, as all animals show silica reactions in some organs. However, it should be pointed out that the doses of such very active sized particles as they have used are too great to expect differences in reaction from possible differences in individual susceptibility. They note the similarity of the splenic lesions to those in Banti's disease and suggest that in each condition absorption of toxic substances from the liver may be the cause. They fail to emphasize, however, that in the silica animals the spleens are themselves the site of many specific silicotic lesions. They call attention to the "proliferation" and "dedifferentiation" of bile duct epithelium that are so common in advanced silicotic cirrhosis of the rabbit liver and rightly emphasize the subsequent absence of a malignant condition.

Die angioarchitektonische areale Gliederung der Grosshirnrinde auf Grund vollkommener Gefässinjektionspräparate vom Gehirn des Macacus rhesus anatomisch dargestellt. Von Dr. phil. et med. Richard Arwed Pfeifer, Professor der Hirnforschung an der Universität Leipzig. Paper. Price, 38 marks. Pp. 352, with 293 illustrations. Leipzig: Georg Thieme, 1940.

This is a profusely illustrated monograph concerning the angio-architectonics of the cerebral cortex of Macacus rhesus. The preparations were made by the author's injection method. The author maintains that angio-architectonics is now an autonomous discipline comparable to cytoarchitectonics and myeloarchitectonics. On the basis of his studies Pfeifer has prepared an elaborate map of the cerebral cortex of the macaque and gives detailed photographs of the vascular pattern of the most important areas. The differences in vascularization are sometimes obvious; in other cases considerable imagination is necessary to see the boundaries. One wonders what results the author would have arrived at if he had had no cyto-architectonic maps before him. The fields outlined are not identical with those of Brodmann but the general correspondence is striking. It would serve no purpose to go into detail concerning the topographic results of this study. The book is of no use to the practitioner of medicine. Its appeal will be to a small group of students of the cerebral cortex, to whom this careful and detailed work with its numerous excellent plates will be of great interest.

Sir Thomas Roddick: His Work in Medicine and Public Life. By H. E. MacDermot, M.D. Cloth. Price, $2. Pp. 160, with 12 illustrations. New York & Toronto: Macmillan Company, 1938.

The mention of the name Roddick, especially in medical circles in Canada, immediately brings to mind one event documented in the annals of Canadian statutes as the Roddick bill, an act of Parliament which provided for the Medical Council of Canada. One would have to understand a good deal about the Canadian constitution with its British North America act and provincial autonomy to appreciate the full significance of Dr. Roddick's achievement, because it was an achievement, largely of one man, to persuade the authorities to carry this act into effect; and Dr. Roddick will always be remembered north of the forty-ninth parallel of latitude for this accomplishment. Dr. MacDermot in this little volume tells the story simply but

fascinatingly. He also gives a glance at Roddick the man, Roddick the student, with his quaint sense of humor. We are then introduced to Roddick the professional man of keen insight and ability. One who likes biography which presents in stereopticon fashion the various facets which go to make up an unusual man, written in a style which is easy to read, will enjoy this book.

Transition Years: The Modern Approach to "the Change" in Womanhood. By Joseph Rety, M.D. Cloth. Price, $1.75. Pp. 168, with one illustration. New York: Greenberg, Publisher, Inc., 1940.

This excellent book reveals the author as one who has a real clinical knowledge of the problem he is discussing. The simple, even homely, style is peculiarly well adapted to the group for which it is written; i. e., the present generation of middle-aged women, most of whom have had little or no reliable information in this field. Each chapter contains elementary yet adequate material to clarify its meaning. Substitution of "uterus" for "womb" might be suggested as an additional educational feature. The chapter on the ductless glands is well handled. The discussion of the "change," the description of the many symptoms of the climacteric, both physical and psychologic, the recommended daily routine, the relationship of the climacteric and sexual life, the admonitions to husbands and the final chapter addressed to widows and spinsters all paint a picture which only a physician of wide experience and clear perception could do so well.

Pathological Histology. By Robertson F. Ogilvie, M.D., F.R.C.P., Senior Pathologist, Royal Infirmary, Edinburgh. Foreword by A. Murray Drennan, M.D., F.R.C.P., Professor of Pathology, University of Edinburgh. Cloth. Price, $8.50. Pp. 332, with 220 photomicrographs in color by T. C. Dodds, F.R.P.S., F.I.B.P., Senior Technician, Pathology Department, University of Edinburgh. Baltimore: William Wood & Company, 1940.

The principal feature of this small volume is the illustration of its text by 220 photomicrographs in color. It is in fact an atlas of histopathology and is intended to be supplementary to a standard textbook. The text is rather brief and is limited mainly to histologic descriptions. Most of the illustrations are good and will be helpful in teaching histopathology. The illustrations of blood cells, however, do not show nuclear structure clearly and are inferior to good drawings. Photomicrographs in color have the advantage that they resemble the stained section closely, yet they usually do not show the details of structure as sharply as good photomicrographs in black and white. This work will prove useful as a supplementary textbook.

Penny Marsh, Supervisor of Public Health Nurses. By Dorothy Deming, R.N. Cloth. Price, $2. Pp. 303, with 9 illustrations by Dorothea Warren. New York: Dodd, Mead & Company, 1939.

This is a sequel to the volume "Penny Marsh: Public Health Nurse." It details the further adventures of Penelope Marsh, R.N., in the field of public health nursing and describes her experience and life as a supervisor. It is interestingly written and the information on public health nursing problems is cleverly interspersed between adventure and a love interest. The book can be recommended for the seniors in high school and for the young women in college as a part of the vocational guidance library.

Selected Writings of Sir Charles Sherrington: A Testimonial Presented by the Neurologists Forming the Guarantors of the Journal BRAIN. Compiled and edited by D. Denny-Brown. Cloth. Price, $7.50. Pp. 532, with 86 illustrations. New York: Paul B. Hoeber, Inc., 1940.

This book was published by the guarantors of the journal *Brain*, themselves neurologists and physiologists, because they wished to make some of Sherrington's reprints and extracts of his published papers more readily available for those interested in biologic, physiologic and clinical medical sciences. In this excellent compilation one will find the original descriptions of the spinal animal, the experimental isolation of skin and muscle segmentation, observations on reflexes and their interaction, the motor representation in the primate cortex and the fundamental proof of reciprocal innervation and postural reflexes. The conception of central inhibition is also discussed. This book is highly recommended to the neurologist, physiologist and psychologist. It will serve as an excellent reference manual for all of Sherrington's contributions.

Workers' Health Hazards—Today and Tomorrow. Detection and Control of Silicosis and Other Occupational Diseases. What New York State has done and the Job Ahead. A Progress Report to the Legislature of the State of New York Submitted by Frieda S. Miller, Industrial Commissioner. Paper. Pp. 31, with illustrations. New York: Department of Labor, 1940.

This brochure is a progress report addressed in popular language to the state legislators on the activities in the field of health protection of workers, undertaken by the Division of Industrial Hygiene of the New York State Department of Labor. For technical discussions of actual work performed, other scientific reports and statements of this agency should be consulted.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: Cancer of Pancreas Allegedly Due to Trauma.—When the blade of a road grader which he was operating or helping to operate for Wayne County, Neb., struck a telephone line anchor on Sept. 22, 1936, Lessman allegedly was struck on the chest by a crank handle and on the right thigh and hip by another lever. He was thrown from the grader but was able to climb back on and continue his work. He made no complaint of his injury to any one except his wife until six months later. According to his wife, when he arrived home from work on the day of the accident he complained of injuries to his right knee and hip and to his chest, on which was visible a "bruised mark" in the region of the right nipple. In March 1937 he consulted an osteopath who treated him for pleurisy and strapped his hip and lower part of his pelvis. In the early part of November 1937 he filed a claim for compensation under the workmen's compensation act of Nebraska. During the latter part of that month he became jaundiced. In December, fifteen months after the accident, he died. An autopsy revealed that the cause of death was carcinoma of the head of the pancreas. Lessman's widow was then substituted as claimant. She contended that Lessman's death from cancer of the pancreas had been caused by the accident. The compensation court found to the contrary and denied compensation, but on a rehearing it reversed its decision and awarded compensation. From a judgment of the district court, Wayne County, affirming that award, the defendants, Wayne County and its insurance carrier, appealed to the Supreme Court of Nebraska.

A medical witness for the defendants testified that there is grave doubt whether trauma has any influence on the development of cancer; that it would be extremely difficult for the head of the pancreas, because of its location, to be injured by trauma and that a blow sufficiently severe to drive the abdominal wall back so far that it might reach the head of the pancreas would more likely injure other organs, such as the stomach and liver. Another medical witness for the defendants, a pathologist who had done research work on cancer, testified that he was not entirely convinced that a blow or trauma will cause cancer although in some cases "acute trauma" occasionally appeared to play a causative part, and that in all his experience he had never seen a case of cancer due to trauma. These medical witnesses testified that a blow of sufficient severity to injure the pancreas would cause the person to suffer a shock such as having his breath knocked out, intense pain, rigidity of the muscles, nausea and vomiting and would render him unable to continue his work.

The evidence, said the Supreme Court, was conflicting as to whether Lessman sustained an accidental injury on Sept. 22, 1936. Assuming that an accident did occur at or about that time, it was impossible for the alleged injuries to Lessman's chest under the right nipple and to the right knee and hip to have also caused an injury to the pancreas. The medical testi-

mony showed that if that organ had been seriously injured he would have suffered, among other things, severe shock and vomiting and could not have immediately climbed back on the grader and continued to work without complaint. If, continued the court, contrary to the evidence, it is assumed for purposes of argument that in some unknown manner Lessman's pancreas was slightly injured, it is highly speculative whether such injury produced or in any way affected the carcinoma from which he died. From the evidence it appeared that no cancer has ever been deliberately produced experimentally by trauma. Although severe injuries to the human body have been followed by "cancer" at the point of injury, the tumor involved has usually been the "violently malignant form of sarcoma." Even in these cases medical authorities are sharply divided as to whether such injuries simply reveal and accelerate the growth of a "cancer" already present or actually cause the sarcoma itself. In the judgment of the court the evidence failed to show with reasonable certainty that Lessman's death had been caused by an accidental injury in the course of his employment. Awards of compensation, said the court, cannot be based on mere speculation, possibilities or probabilities. Accordingly, the judgment of the district court upholding the award of compensation was reversed.—*Wayne County v. Lessman (Neb.), 285 N. W. 579.*

Malpractice: Liability of Hospital for Negligence of Intern and Nurse.—The plaintiff was a pay patient in the hospital operated for profit by the defendant, the Stuart Circle Hospital Corporation. As a part of its business the hospital undertook, through nurses and interns employed by it, to give the plaintiff nursing service and medical treatment. Preparatory to the taking of roentgenograms of the plaintiff's gallbladder an intern, on the written order of the plaintiff's attending physician, attempted to administer an intravenous injection of a dye solution consisting of from 50 to 60 per cent free iodine, a caustic substance which if injected outside of the vein "will seriously burn human tissue." The intern injected approximately 17 cc. of the solution outside of the vein into the surrounding tissue in the plaintiff's right arm with the result that she suffered pain and her right elbow became stiffened. At the attending physician's direction a graduate nurse employed by the hospital applied to the plaintiff's right arm a hot compress over which she placed "surgical wax" and a hot water bottle wrapped in a bath towel. One and one-half hours later a student nurse discovered that the plaintiff's arm was very red. Due to either excessive heat from the hot compress or too long a period of application, or both, the plaintiff received "considerable first and slightly second degree burns" on her upper forearm with subsequent scarring. As the result of the injection of the dye solution she became practically an invalid with a partial sensory paralysis of her right radial nerve, a "thirty degree disability" in the use of her right arm, loss of the use of two fingers and the thumb of her right hand, insomnia and excessive nervousness. She brought suit against the defendant corporation for malpractice and from a judgment in her favor for $13,000 the defendant brought error to the Supreme Court of Appeals of Virginia.

The defendant contended that under the medical practice act of Virginia, which prohibits the practice of medicine by any one except a licensed physician, a hospital is not permitted to practice medicine, that it cannot make a valid contract to render medical services which involve the exercise of professional skill and judgment and so it cannot be held liable for a breach of such a contract or for damages due to negligence of one of its interns while performing an act requiring the exercise of such skill and judgment. However, the medical practice act provides that nothing therein shall be construed "to affect or interfere in any way with the operation of any hospital . . . if there be a licensed practitioner resident or practicing therein." While this exemption, said the Supreme Court of Appeals, does not permit a hospital to engage in the practice of medicine within the intent of the broad statutory meaning of that term, it does authorize such institutions to engage in so much of the practice of medicine as enables it to render to its patients such necessary routine medical care and attention as is customarily engaged in by hospitals in the proper conduct of their businesses.

The implied contract on the part of the hospital corporation, continued the court, to undertake for compensation to render to the plaintiff through its agents or employees all necessary routine medical treatment and nursing services which her condition might require was neither illegal nor ultra vires. The contract was not to furnish a competent and skilled physician but an intern whose relationship with the hospital was different from that of the patient's attending physician or of the members of the hospital staff. A hospital is not responsible for the acts of an attending physician whether he is a member of its staff or an outsider except when by special contract it has assumed such responsibility, because he is an independent contractor and is subject to no control by the hospital in the exercise of his professional skill and judgment. An intern, on the other hand, is not an independent contractor but is selected, employed, directed, supervised and paid by the hospital. He does not hold himself out as practicing medicine and does not have patients of his own. While the duties and functions of a nurse and an intern may vary, there is no substantial difference in their relationship to the patient in the hospital, and they both act as servants or agents of their employer, the hospital. The court concluded, therefore, that a private hospital operated for profit and held out to the public as furnishing to its patients medical and nursing services is responsible to a patient for the negligent acts of its intern and nurse employed by it and acting under its supervision and control, in the performance of their routine duties.

In the judgment of the court the evidence adduced was sufficient to justify the trial court's finding that both the intern and the nurse had been negligent. In its opinion the verdict for $13,000 was not excessive because the plaintiff's injuries were serious and the medical witnesses were unable to forecast whether or not her physical and "neurotic condition" would improve. Accordingly, the judgment of the trial court in favor of the plaintiff was affirmed.—*Stuart Circle Hospital Corporation v. Curry (Va.), 3 S. E. (2d) 153.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Cleveland, Oct. 6-11. Dr. William P. Wherry, 107 South 17th St., Omaha, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Excelsior Springs, Mo., Sept. 26-28. Dr. James R. Bloss, 418 Eleventh St., Huntington, W. Va., Secretary.

American Association of Railway Surgeons, Chicago, Sept. 16-18. Dr. Daniel B. Moss, 547 West Jackson Blvd., Chicago, Secretary.

American Congress of Physical Therapy, Cleveland, Sept. 2-6. Dr. Richard Kovacs, 2 East 88th St., New York, Secretary.

American Hospital Association, Boston, Sept. 16-20. Dr. Bert W. Caldwell, 18 East Division St., Chicago, Executive Secretary.

American Public Health Association, Detroit, Oct. 8-11. Dr. Reginald M. Atwater, 50 West 50th St., New York, Executive Secretary.

American Roentgen Ray Society, Boston, Sept. 26-Oct. 4. Dr. Carleton B. Peirce, Royal Victoria Hospital, Montreal, Canada, Secretary.

American Society of Anesthetists, New York, Oct. 10. Dr. Paul M. Wood, 745 Fifth Avenue, New York, Secretary.

Association of Military Surgeons of the United States, Cleveland, Oct. 10-12. Dr. H. L. Gilchrist, Army Medical Museum, Washington, D. C., Secretary.

Clinical Orthopaedic Society, Milwaukee and Madison, Wis., Oct. 18-19. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

Colorado State Medical Society, Glenwood Springs, Sept. 11-14. Mr. Harvey T. Sethman, 537 Republic Bldg., Denver, Executive Secretary.

Delaware, Medical Society of, Rehoboth Beach, Sept. 9-11. Dr. C. L. Munson, 1015 Washington St., Wilmington, Secretary.

District of Columbia, Medical Society of the, Washington, Oct. 15-17. Mr. Theodore Wiprud, 1718 M St., N.W., Washington, Secretary.

Idaho State Medical Association, Sun Valley, Sept. 11-14. Dr. J. N. Davis, 204 Fourth Ave., East, Twin Falls, Secretary.

Inter-State Postgraduate Medical Association of North America, Cleveland, Oct. 14-18. Dr. W. B. Peck, 27 East Stephenson St., Freeport, Ill., Managing Director.

Kentucky State Medical Association, Lexington, Sept. 16-19. Dr. A. T. McCormack, 620 South Third St., Louisville, Secretary.

Michigan State Medical Society, Detroit, Sept. 24-27. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing, Secretary.

Mississippi Valley Medical Society, Rock Island, Ill., Sept. 25-27. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Nevada State Medical Association, Las Vegas, Oct. 11-12. Dr. Horace J. Brown, 120 North Virginia St., Reno, Secretary.

Oregon State Medical Society, Eugene, Sept. 4-7. Dr. Morris L. Bridgeman, 1020 S.W. Taylor St., Portland, Secretary.

Pacific Association of Railway Surgeons, Reno, Nev., Sept. 20-21. Dr. W. T. Cummins, 1400 Fell St., San Francisco, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, Sept. 30-Oct. 3. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh, Secretary.

Vermont State Medical Society, Rutland, Oct. 9-10. Dr. B. F. Cook, 154 Bellevue Ave., Rutland, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 18-20. Mr. J. G. Crownhart, 110 East Main St., Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1930 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

20:1-128 (July) 1940

*Immunization Against Rheumatic Fever with Hemolytic Streptococcus Filtrate. Valentina P. Wasson and E. E. Brown, New York.—p. 1.

Prediction of Differences Between Precordial Leads Cr, Cl and Cf, Based on Limb Lead Findings. C. C. Wolferth and F. C. Wood, Philadelphia.—p. 12.

Studies on Time Required for Elimination of Quinidine From Heart and Other Organs. S. A. Weisman, Minneapolis.—p. 21.

Responses of Normal Heart and Heart in Experimental Vitamin B_1 Deficiency to Metabolites (Pyruvic Acid, Lactic Acid, Methyl Glyoxal, Glyceraldehyde and Adenylic Acid) and to Thiamine. Florence W. Haynes and S. Weiss, Boston.—p. 34.

Study of Effects of Nicotinic Acid and Related Pyridine and Pyrazine Compounds on Temperature of Skin of Human Beings. W. B. Bean and T. D. Spies, Cincinnati.—p. 62.

Comparison of Orthodiagram with Teleoroentgenogram. J. Edeiken, Philadelphia.—p. 77.

*Comparative Study of Normal and Abnormal Blood Pressures Among University Students, Including Cold Pressor Test. E. A. Thacker, New Orleans.—p. 89.

Studies in Hypertensive Heart Disease: IV. Factors in Production of Congestive Failure. D. Davis and M. J. Klainer, Boston.—p. 98.

Complete Coarctation of Aorta: Case Report. S. Gitlow and R. I. Sommer, New York.—p. 106.

Paroxysmal Tachycardia in Child, Treated with Acetyl-Beta-Methylcholine Chloride (Mecholyl). B. J. Walsh and H. B. Sprague, Boston.—p. 111.

Immunization Against Rheumatic Fever.—Wasson and Brown report on immunization with a filtrate of hemolytic streptococcus of thirty-two patients known to have rheumatic fever. The only criteria for selecting the patients for treatment were their early enrolment for immunization (September and October) and their promise to cooperate during the protracted course of inoculations, which required at first weekly and then monthly visits to the clinic each winter, amounting to a total of from thirty-four to thirty-six visits. For a detailed account of the preparation of the filtrate and the method of administration, the authors refer to an earlier report published by Wasson in the *American Heart Journal* (**15**:257 [March] 1938, abstr. THE JOURNAL, May 14, 1938, p. 1705). The routine procedure with each treated and untreated patient was the same. On admission to the clinic a careful history was taken, with emphasis on familial, racial and hygienic factors. Each patient was examined carefully at the outset in the cardiac clinic; the examination included an exercise tolerance test, a teleoroentgenogram and an electrocardiogram. Since most of the rheumatic fever patients suffer from chronic sinusitis, the nasopharynx received special attention. Next followed the laboratory procedure, which consisted of a routine urinalysis, a complete blood count, with special emphasis on the nonfilamented neutrophil (Schilling) count, and the erythrocyte sedimentation rate. The patients' parents were given printed instructions, telling in simple language how to deal with children suffering from rheumatic fever. At each subsequent visit the authors took the interval history, did a Schilling count and measured the hemoglobin percentage and the erythrocyte sedimentation rate. If the patient showed symptoms of subacute rheumatic fever or a severe upper respiratory infection he was sent home to bed with instructions to return in from three to seven days. In the event of an acute attack of rheumatic fever, the patient was admitted to the hospital or visited at home by one of the cardiologists. The authors present a comparison of the treated and the control groups and they also report the result of the follow-up on the formerly treated patients. It appears that inoculation with hemolytic streptococcus filtrate of patients known to have rheumatic fever continues, after six years, to have beneficial effects on carditis. The authors realize that the total of sixty-six treated patients is too small a group from which to draw definitive conclusions. Nevertheless, the well-being of the treated patients throughout the past six years is impressive.

Blood Pressure Among University Students.—Thacker studied the blood pressure of 15,500 male students at the University of Illinois. Those with high or low pressure, as well as normal controls, were reexamined at intervals. The students with a systolic blood pressure of more than 150 mm. of mercury were placed in hypertension group. All students with a systolic pressure below 108 were classified as having hypotension. The normal, or control, group consisted of matriculants with a systolic blood pressure between 114 and 138 mm. of mercury. The cold pressor test technic as described by Hines and Brown was used to study the vasomotor reactions of ninety-six hypertensive, 128 normal and fifty-six hypotensive subjects. Two variations of this technic were made. The hand was kept in ice water until the maximum rise in blood pressure was reached. Thirty students were tested in the reclining position according to the method of Hines and Brown. These students were tested also in the sitting position. It was found that the basal blood pressure readings and the response to the cold pressor test in the two positions checked with each other. Consequently the remaining tests were all done with the subject in the sitting position. With the application of the standard cold test the normal subjects reached the maximum increase in the systolic and diastolic blood pressure sooner than the hypertensive and hypotensive subjects. There was a greater increase in the systolic and diastolic blood pressure in the hypertensive group than in the control group. The blood pressure of the hypotensive and hypertensive subjects returned to the basal level more slowly than did that of the normal subjects. There was a far greater difference between the usual systolic blood pressure and the basal blood pressure in the hypertensive group than in the normal and hypotensive groups. This criterion is a definite aid in discovering hyperreactors, especially when it is confirmed by the cold test. The same factors which govern the emotional status of individuals play an important part in their blood pressure reactions. There is a hereditary factor in the regulation of blood pressure. The tendency toward essential hypertension or hypotension is carried by the germ plasm from one generation to the next. The percentage of heavy eaters in the hypertensive group was over twice as great as in the normal and hypotensive group. The amount of work or exercise is apparently not an etiologic factor in the production of essential hypertension. Tobacco and coffee were used by two to three times as many students in the hypotensive group as in the other two groups. At least two or three subsequent examinations should be made before a person is classified as having hypertension or hypotension. This will prevent worry and anxiety and will be of value in arriving at a definite diagnosis.

American Journal of Cancer, New York

39:149-308 (June) 1940

Carcinogenic and Related Noncarcinogenic Hydrocarbons in Tissue Culture: II. E. Marie Hearne Creech, Cambridge, Mass.—p. 149.

Transmission of Human Papilloma to Monkeys. R. G. Green, R. J. Goodlow, C. A. Evans, W. T. Peyton and L. A. Titrud, Minneapolis.—p. 161.

Growth of Transplanted Mammary Fibro-Adenoma in Castrated Rats Injected with Hormones. J. Heiman, New York.—p. 172.

Influence of Androgenic Hormones on Transplanted Mammary Tumors in White Rats. J. Heiman, New York.—p. 178.

Minimal Quantity of Estrogen Required to Induce Atypical Epithelial Growth of Uterine Mucosa in Guinea Pig. A. Lipschütz, L. Vargas Jr., A. Jedlicky and P. Bellolio, Santiago, Chile.—p. 185.

Synovioma (Synovialoma) of Foot: Report of Case. W. C. Black, Denver.—p. 199.

Carcinoma of Cervix Before the Age of 20 Years. A. W. Diddle, Iowa City.—p. 207.

Neoplasm Studies: VII. Granulocytes in Regressing Transplants of Spontaneous Mouse Tumors. C. G. Grand and R. Chambers, New York.—p. 211.

Contribution to Pathogenesis of Multiple Hereditary Osteochondromatosis: Experimental Study. S. A. Jacobson, Brooklyn.—p. 220.

Lipoidal Antigen Produced by Certain Malignant Tumors of Mouse. L. Hoyle, Leeds, England.—p. 224.

Effect of Light on Incidence of Tumors in Painted Mice. I. Doniach and J. C. Mottram, Middlesex, England.—p. 234.

Influence of Induced Hibernation on Mouse Sarcoma 180. F. Bischoff and M. Louisa Long, with histologic reports by J. J. Rupp, Santa Barbara, Calif.—p. 241.

Glycolysis in Tumor Tissue: III. Effect of Ultrasonic Vibrations on Growth and Glycolysis of Walker Sarcoma 319. Frances F. Beck and J. C. Krantz Jr., Baltimore.—p. 245.

American J. Digestive Diseases, Huntington, Ind.

7:277-322 (July) 1940

Studies on Effect of Human Gastric Juice on Reticulocytes of Albino Rats. C. P. Schlicke, Rochester, Minn.—p. 277.
Effect of Long Continued Ingestion of Oxidized Bile Acids on Dog and Rat. A. L. Berman, E. Snapp, A. C. Ivy and A. J. Atkinson, Chicago.—p. 280.
Diverticula of Cardiac End of Stomach: Review of Literature and Report of Three Cases. D. T. Bonham, Hempstead, N. Y.—p. 284.
Digestive Tract Infection by Virus of Lymphogranuloma Inguinale. W. E. Coutts, L. Opazo and Martha Montenegro, Santiago, Chile.—p. 287.
Results of Questionnaire on Fatalities in Gastroscopy. R. Schindler, Chicago.—p. 293.
Digestion and Absorption in Man with All But 3 Feet of Small Intestine Removed Surgically. W. R. Todd, M. Dittebrandt, J. R. Montague and E. S. West, Portland, Ore.—p. 295.
Fecal Impaction Due to Hygroscopic Gum Laxative. S. P. Waud, Chicago.—p. 297.
Xerostomia Successfully Treated with Nicotinic Acid. W. Saphir, Chicago.—p. 298.

American Journal of Diseases of Children, Chicago

60:1-248 (July) 1940

Pediatrician in Councils of the Nation. H. B. Wilcox, New York.—p. 1.
California Tall Children. O. Lloyd-Jones, Los Angeles.—p. 11.
Hematologic Values for Normal Children 3, 4 and 5 Years of Age Living in Hawaii. C. J. Hamre and K. K. L. Wong, Honolulu, Hawaii.—p. 22.
Effect of Human Serum on Schick Reaction and Blood Antitoxin Titer. L. H. Barenberg, N. M. Greenstein and B. Leighton, New York.—p. 36.
Paranasal Sinuses from Birth to Late Adolescence: I. Size of Paranasal Sinuses as Observed in Routine Postero-Anterior Roentgenograms. M. M. Maresh, Denver.—p. 55.
*Thyrotoxicosis. W. A. Reilly, San Francisco.—p. 79.
Clinical Study of Tetanus. R. Spaeth, Chicago.—p. 130.
To the Baby Doctor. W. E. B. Hall, Denver.—p. 170.

Thyrotoxicosis.—Reilly presents a follow up of sixty-two patients who have had marked thyrotoxicosis during the last twenty-five years. Most of the patients were observed for some years after full arrest had occurred. The disease most commonly occurs at 12 to 14 years and is arrested by the eighteenth year, with an occasional recurrence as late as the thirtieth year. From three to four cycles of the disease, each less severe and of shorter duration, usually recur from two to four years before full arrest sets in. Fifty-five per cent of the patients required surgical intervention because toxicity was severe and persistent. In half of the cases thyroid hyperplasia is relatively benign, self limited, short lived and not a great menace to health in childhood or in later life. However, toxicity is often serious and definite complications ensue. Familial occurrence, overactivity of the parasympathetic nervous system, infection and adolescence with its accompanying "hyperpituitarism" and emotional upsets, singularly or more often in combination, brought on the disease. While infection was a strong factor in many, sex and adolescence and the probable overactivity of the anterior lobe of the pituitary were striking factors. There were eight boys and fifty-four girls. The clinical picture in children, with several exceptions, is the same as that in adults. The exceptions are skeletal growth and sexual maturation. The patients were Californians. The mountainous areas of California are endemic for the disease. Its occurrence may be linked with a low intake of iodine in the water. Information on skeletal growth was available for forty-four patients; thirty-six were tall and eight were of average height. Parallel with this "gigantism," the epiphysial age was accelerated markedly. Girls of 13 and 14 years of age often had bone ages of 16 to 18 years. Tall girls were often eunuchoid in proportion, but occasionally they were heavy framed and "acromegaloid." The teeth were often prematurely developed and erupted. This depended on the severity and duration of the disease. Studies indicated demineralization of the body and skeleton. Information on sexual maturity was available for thirty-one girls. Secondary sexual characteristics often fail to appear during toxicity or they develop slowly. Menstruation failed to develop in four and was scanty in four, amenorrhea followed toxicity in nine and the menses were normal in fifteen during toxicity. In the only boy studied, sexual maturation was retarded. The more active the toxicity the longer its duration, and the nearer it occurred to expected puberty the more suppressed was sexual maturation. As the disease occurs more often during the normal periods of growth spurts, hyperpituitarism and thyrotropic hormone may play an activating part. A one stage resection of the thyroid arrested the disease in more than 90 per cent of the thirty-three patients operated on. One recurrence, nine years postoperatively, was successfully arrested by irradiation. Preoperative irradiation was not successful in reducing the activity of the thyroid. Before surgical arrest, twenty-eight of the thirty-three patients operated on were treated by other means; these often only temporize. There were twelve definite and three questionable recurrences; six of the definite recurrences occurred between the ages of 18 and 30 years with three to twelve years since the previous activity. Surgical recurrence occurred in 6 per cent of the patients. Complications occurred in twelve of the fifty-one patients in whom they were recorded. Mild hypothyroidism occurred once after six years of very active toxicity. Myocarditis was encountered in seven patients, and all recovered. Fibrillation occurred once. Osteoporosis was observed in three patients. Alopecia was seen in one patient and eunuchoidism in two patients. Nervousness was frequent. Thyroid crisis occurred in two patients. Among the thirty-three patients operated on, hypothyroidism was permanent in two, in one at 12 years (four years postoperatively) a mild hypothyroidism began and was still present at 30 years and in four hypothyroidism after operation was only temporary. In two patients hypoparathyroidism was permanent but mild and controllable, in two it was temporary but mild and in one it lasted nine years, and hyperventilation was present.

American Journal of Ophthalmology, St. Louis

23:735-852 (July) 1940

Amaurotic Idiocy and Related Conditions: Pathology of Retina in Infantile Amaurotic Idiocy. A. Hagedoorn, Amsterdam, the Netherlands.—p. 735.
Development of Modern Ophthalmology in One Lifetime. E. Jackson, Denver.—p. 759.
The Question of the Rickettsial Nature of Trachoma. Ida A. Bengtson, Washington, D. C.—p. 770.
Benign Melanomas of Choroid and Their Malignant Transformation. E. C. Albers, Champaign, Ill.—p. 779.
Biochemistry of Lens: Résumé. J. E. Lebensohn, Chicago.—p. 784.
Eye Studies Following Lumbar Puncture. L. S. Powell, Lawrence, Kan., and H. S. Smith, Osawatomie, Kan.—p. 792.
Retrograde Degeneration in Optic Nerves and Tracts: Experimental Study of Changes in Axis Cylinders. P. J. Leinfelder, Iowa City.—p. 796.
Use of Purkinje Figures as Test for Separated Retina and Other Intra-Ocular Pathology. C. B. Walker, Los Angeles.—p. 803.

American Journal of Surgery, New York

49:1-200 (July) 1940

Tubal Pregnancy: Study of Cases with Emphasis on Diagnosis and on Blood Loss in Relation to Shock Symptoms. K. W. Woodhouse, Cedar Rapids, Iowa.—p. 3.
Newer Aspects in Treatment of Vaginitis in Children. Rose H. André, New York.—p. 27.
Vaginal Hernia. A. O. Wilensky and P. A. Kaufman, New York.—p. 31.
Creeping Epithelium of Anal Canal. J. Krafka Jr., Augusta, Ga.—p. 42.
Chlorophyll—Its Therapeutic Place in Acute and Suppurative Disease: Preliminary Report of Clinical Use and Rationale. B. Gruskin, Philadelphia.—p. 49.
Effects of Sutures on Strength of Healing Wounds, with Notes on Clinical Use of Annealed Stainless Steel Wire Sutures. D. J. Preston, Philadelphia.—p. 56.
Subdural Hematoma. W. D. Abbott, Des Moines, Iowa, and D. H. Kaump, Detroit.—p. 64.
Retropulsion of Lumbar Intervertebral Disks as Cause of Low Back Pain with Unilateral "Sciatic" Radiation: Roentgenologic Diagnosis, with Special Reference to Iodolography. J. M. Robinson, San Francisco.—p. 71.
Ulnar Nerve Paralysis Complicating Fracture of Medial Epicondyle of Humerus. J. I. Anton and G. B. Reitz, with the collaboration of J. Sader and M. B. Spiegel, Brooklyn.—p. 89.
*Treatment of Dupuytren's Contracture. H. W. Meyerding, Rochester, Minn.—p. 94.
*Problem of Acute Appendicitis: Survey Covering Four Years. H. J. King, Binghamton, N. Y.—p. 104.

Treatment of Dupuytren's Contracture.—A review of the literature, according to Meyerding, suggests that conservative treatment, such as stretching, heat massage, the use of ointments and irradiation, has failed to prevent or cure Dupuytren's contracture. After an experience of more than twenty years, during which time he has seen 315 patients afflicted with this condition and has operated on more than 100, he has concluded that the operation of choice is the surgical excision of the

involved palmar fascia. The result has been satisfactory in about 90 per cent of the cases. Subcutaneous section of the constricting bands of palmar fascia is a satisfactory method of treatment in certain cases. A carefully managed program of physical therapy is necessary. A combination of excision, splinting and physical therapy results in a useful functioning extremity.

Acute Appendicitis.—King reviews a series of cases of appendicitis observed at the Binghamton City Hospital during the years 1934-1937 inclusive and during the year 1929-1930. During the four years 1934-1937, 1,628 patients were operated on primarily for appendicitis. There were 824 chronic cases and 804 acute cases. The author points out that the fact that appendicitis mortality as reflected from the surveys by insurance companies and from the United States Bureau of Census showed a definite downward trend in the past ten years is not borne out in this series; all this despite the fact that the incidence of early and more favorable cases has been steadily increasing. The mortality rate among the cases complicated by peritonitis has failed to improve. Acute uncomplicated appendicitis had a mortality rate of 0.34 per cent, a figure which is almost irreducible. Appendical abscess had a mortality rate of 14.3 per cent, which is too high. A short but representative experience with bacteriophage in the treatment of ruptured appendicitis indicates that it may be a valuable adjunct in the treatment of these difficult cases. Improvement in appendicitis mortality, which is improvement in peritonitis mortality, calls for a revision of the present methods of treatment and the introduction of such new features as have been tried and proved superior. The key to lowering of the mortality from appendicitis lies in reducing the incidence of peritonitis.

Anesthesiology, New York

1:1-120 (July) 1940

Place of the Anesthetist in American Medicine. H. W. Haggard, New Haven, Conn.—p. 1.
Cyclopropane Anesthesia. A. E. Guedel, Los Angeles.—p. 13.
Abdominal Relaxation with Combined Regional and Cyclopropane Anesthesia. C. F. McCuskey, Glendale, Calif.—p. 26.
Cyclopropane-Air-Oxygen Anesthesia: Preliminary Report. H. B. Haas, H. J. Hibshman and F. T. Romberger, Lafayette, Ind.—p. 31.
Role of Liver and Kidneys from the Standpoint of the Anesthetist. L. H. Mousel and J. S. Lundy, Rochester, Minn.—p. 40.
Convulsions During Anesthesia: Experimental Analysis of Role of Hyperthermia and Respiratory Acidosis. W. H. Cassels, T. J. Becker and M. H. Seevers, Madison, Wis.—p. 56.
Local Anesthetic Properties of Ephedrine Hydrochloride. F. H. Schultz, New Haven, Conn.—p. 69.
Prevention and Treatment of Postoperative Pulmonary Complications, with Special Reference to Suction Bronchoscopy. U. H. Eversole, Boston.—p. 72.
Changes in Velocity of Blood Flow During Spinal Anesthesia. E. A. Doud and E. A. Rovenstine, New York.—p. 82.
Studies on Early Postoperative Reduction of Prothrombin in Jaundiced and Biliary Fistula Patient, with Special Reference to Anesthesia. J. G. Allen and Huberta Livingstone, Chicago.—p. 89.
Treatment of Aphonia by Intravenous Administration of Pentothal Sodium. L. H. Gold and M. L. Garofalo, Hartford, Conn.—p. 94.

Archives of Otolaryngology, Chicago

32:1-194 (July) 1940

Artificial Fistula in Cases of Otosclerosis. L. K. Guggenheim and P. Guggenheim, Los Angeles.—p. 1.
Gangrene and Infection of Ear, Nose and Throat Complicating Diabetes Mellitus: Review of Clinical Manifestations with Surgical Considerations and Report of Case. S. A. Goldberg, Philadelphia.—p. 16.
Developmental Extension of Anterior Ethmoid Cell Within Frontal Sinus: Report of Case. H. I. Lillie and K. M. Simonton, Rochester, Minn.—p. 32.
Neoplasms Involving Middle Ear. H. Rosenwasser, New York.—p. 38.
Intradural Conditions in Relation to Rhinology and Otology: Critical Survey of Recent Literature. W. P. Eagleton, Newark, N. J.—p. 54.
Tumors of the Nose and Throat. G. B. New and J. B. Erich, Rochester, Minn.—p. 123.
Plastic Surgery, 1939. R. H. Ivy and H. A. Miller, Philadelphia.—p. 159.

Iowa State Medical Society Journal, Des Moines

30:273-380 (July) 1940

Problems and Aims of Profession of Medicine. A. McMahon, St. Louis.—p. 273.
Ectopic Pregnancy. A. W. Brown, Des Moines.—p. 280.
Diagnosis and Treatment of Appendicitis. G. M. Crabb, Mason City.—p. 284.

Journal-Lancet, Minneapolis

60:291-338 (July) 1940

The Administration of School Health and Physical Education as an Integrated Unit. S. U. Lawton, New York.—p. 310.
Roentgen Analysis of Pelvis in Pregnancy, with Some Observations on Technic. C. N. Borman, Minneapolis.—p. 312.
The Common Cold: Evaluation of Oral Vaccine Based on Controlled Study. C. I. Stafford, Oxford, Ohio.—p. 319.
The Cooperation of the Health Service and the Physical Education Department. D. F. Smiley, Ithaca, N. Y.—p. 325.
White Flies in Europe. A. S. Rider, Flandreau, S. D.—p. 327.
Experimental Studies of Some Comparative Nutritional Values of Homogenized and Strained Vegetables. J. Giblin, J. A. Killian and Katherine L. Eyerly, New York.—p. 329.

Journal of Pediatrics, St. Louis

17:1-142 (July) 1940

*Treatment of Acute Stomatitis. C. H. Smith, New York, and H. B. Johnson, Kingston, N. Y.—p. 1.
Disturbance of Osseous and Lipid Metabolism in Child with Primary Carcinoma of Liver. A. E. Hansen, Mildred R. Ziegler and I. McQuarrie, Minneapolis.—p. 9.
Treatment of Acute Staphylococcic Infections with Sulfamethylthiazole. D. Weisman and H. Russell, White Plains, N. Y.—p. 31.
Methemoglobinemia Following Sulfanilamide and Sulfapyridine Therapy in Infants and Children. B. W. Carey and J. L. Wilson, Detroit.—p. 38.
Clinical Study of the Weltmann Serum Coagulation Reaction. Susan Coons Dees, Minneapolis.—p. 44.
Experimental Study of the Weltmann Serum Coagulation Reaction. Susan Coons Dees, Minneapolis.—p. 53.
*Prevention of Rickets in Premature Infants with Parenteral Administration of Single Massive Doses of Vitamin D. C. Zelson, New York.—p. 73.
Use of Soybean Emulsion in Simplified Regimen for Study and Treatment of Infantile Eczema. S. J. Levin, Detroit.—p. 79.
Prevention of Measles in a Boys' Camp Through Use of Immune Globulin (Measles Antibody). E. Denhoff, Boston.—p. 86.
Pneumococcic Peritonitis in Nephrotic and Non-Nephrotic Children: Comparative Clinical and Pathologic Study with Brief Review of the Literature. M. Pahmer, New York.—p. 90.

Acute Stomatitis.—Smith and Johnson used chromic acid in local treatment of gingivostomatitis for twenty years. The gums and ulcers are dried carefully with a swab and another swab is dipped into the chromic acid solution (from 5 to 7 per cent in water) and applied directly to the ulcers and inflamed gums. Some of the solution is gently worked in between the gums and the teeth. The general treatment is that of any febrile illness. Chromic acid has a definite analgesic effect. The application causes little or no pain. Patients can eat with more comfort for several hours after a treatment. The inflammation of the gums begins to improve after two or three treatments (two a day) and in from forty-eight to seventy-two hours there is a distinct change. The records of the Children's Medical Service at Bellevue Hospital show about twenty cases a year. Sixty-eight of the old cases were selected for analysis. Boys and girls between the ages of 1 to 3 years were equally affected. Thirty-six were treated with chromic acid and thirty-two with perborate or gentian violet. The total duration of the disease was roughly the same in the two groups, about thirteen days. But the duration of the disease after starting chromic acid treatment averaged about two days (seven and a half as compared to nine and a half) less than in patients treated otherwise. Twelve patients with gingivostomatitis were treated more systematically; six had symptoms from one to two days before treatment was begun and they were improved in from twenty-four to forty-eight hours and practically well in about four days. The time necessary for a complete return to normal depends on the duration of the disease before the treatment is started. In several private patients, in whom treatment was begun as soon as the gum margins became red and isolated ulcers appeared, the mouth healed in three or four days.

Prevention of Rickets in Premature Infants.—Zelson gave single massive doses of various vitamin D preparations to forty-six premature infants. Twenty infants were given a single parenteral dose of 600,000 units of crystalline vitamin D_2 or D_3 in 0.7 cc. of peanut oil and 0.3 cc. of ether. The others received a single oral dose of from 200,000 to 500,000 units of another preparation. No signs of toxicity or calcium casts in the urine followed the administration of these massive doses. Local infiltrations at the site of the intramuscular injection of vitamin D did not occur. Only seventeen infants were

followed up for from forty-four to 279 days. The others, after discharge from the hospital, did not return or could be followed only for a shorter period. Rickets appeared in only one. The others did not show any clinical, x-ray or chemical sign of rickets up to the time of the last examination. From the evidence it seems reasonable to assume that rickets in premature infants can be prevented for three months by the parenteral administration, although not necessarily by the oral administration, of one single dose of 600,000 units of vitamin D. The definite need for prophylactic doses of vitamin D probably varies with the individual child, depending on term and season of birth, race, constitution, diet, social factors and geographic and climatic conditions. The dose must be adapted to the infant. Premature infants need the first dose approximately in the third week of life. It should be repeated three months later. Subsequently, premature infants resemble infants born at term in their vitamin D requirement. The highest incidence of rickets occurs in the first winter of life. To secure complete protection two doses, one in October and one in January, are generally advocated. This is repeated in the second winter of life, and in the third winter one preventive dose in December might suffice.

Medical Annals of District of Columbia, Washington

9:227-260 (July) 1940

Value of Sympathetic Interruption Following Surgical Repair of Peripheral Aneurysms. J. R. Veal, Washington.—p. 227.
Prolonged Relief of Perineal Pain Following Episiotomy: Preliminary Report. J. B. Sheffery, Washington.—p. 231.
Evaluation of Private Serologic Laboratories by Municipal or State Agencies. H. H. Hazen, Washington.—p. 234.
Spontaneous Rupture of Aneurysm of Iliac Artery Successfully Treated Surgically. W. M. Yater and S. J. Sugar, Washington.—p. 237.
Ménière's Syndrome: Report of Two Cases Treated with Histamine Administered Intravenously. D. W. Ingham, Washington.—p. 241.

New England Journal of Medicine, Boston

223:45-84 (July 11) 1940

Cesarean Section in Massachusetts in 1938. R. L. DeNormandie, Boston.—p. 45.
Hiatus Hernia Simulating Cardiac Infarction: Report of Case. W. D. Reid, Newton, Mass.—p. 50.
Large Adenofibroma of the Breast: Report of Case. F. S. Hopkins, Springfield, Mass.—p. 53.
Treatment of Appendicitis at the Burbank Hospital, Fitchburg, Mass. E. A. Adams, Fitchburg, Mass.—p. 55.
Communicable Diseases: Cardiovascular Disease in Diphtheria. C. Wesselhoeft, Boston.—p. 57.

New Orleans Medical and Surgical Journal

93:1-60 (July) 1940

Sixty Years of Service and Progress in the Louisiana State Medical Society. R. Matas, New Orleans.—p. 1.
Liver Diseases: Etiology and Pathogenesis. W. H. Harris, New Orleans.—p. 8.
Id.: Differential Diagnosis of Liver Disease and Classification of Jaundice. C. J. Tripoli and D. E. Fader, New Orleans.—p. 13.
Id.: Basic Therapeutic Considerations in Diseases of Liver. F. F. Boyce, New Orleans.—p. 18.
Influenzal Meningitis: Review of Recent Literature with Case Reports. Ruth Aléman, New Orleans.—p. 25.
Coordination of Antituberculosis Activities. J. L. Wilson, New Orleans.—p. 34.
*Typhus Fever in Louisiana. J. H. Musser, New Orleans.—p. 39.
Ruptured Infraclenoid Aneurysm: Case Report. G. M. Haik, J. D. Magee and G. C. Anderson, New Orleans.—p. 42.

Typhus in Louisiana.—Musser states that typhus is becoming more frequently observed in the United States, particularly in the Southern states, involving the urban and rural population. The author reported his second case in May 1929, while in 1939 there were 115 cases reported to the Louisiana State Board of Health, Division of Epidemiology. This indicates the rapidity with which typhus has become an epidemiologic problem. In Louisiana the disease occurs both in the summer and in the winter. It is entirely of the endemic type. Endemic typhus has an incubation period of from seven to fourteen days. While there may be irregular prodromes, the disease usually strikes suddenly with a chill or chilliness, followed by high fever, marked headache and severe prostration. The temperature rises persistently and is at its maximum in from five to seven days. The fever is continuous, is maintained for approximately a week and then falls to normal in from five to seven days. The characteristic exanthem, which is really of supreme diagnostic importance, occurs on the fourth or fifth day of the disease. The symptoms of endemic typhus are milder than of the typhoid and infinitely more innocuous than epidemic typhus. The death rate is correspondingly much less. A patient rarely dies of typhus. The author believes that the problem of endemic typhus in the South can be explained by the fact that here the milder winter climate, adequate food supply and failure to rat proof buildings results in a heavy rat population, whereas in the North the necessity of erecting buildings of concrete and brick to keep out the winter and the lack of food for a rat makes the disease relatively rare. The only possible control of endemic typhus is to cut down or minimize the rat population which carries the flea. Continuous trapping and poisoning of rats should be kept up wherever rats are found in a large number.

North Carolina Medical Journal, Winston-Salem

1:331-370 (July) 1940

Importance of Bronchoscopy in Diagnosis of Intrathoracic Conditions. V. K. Hart, Charlotte.—p. 331.
Early Signs and Symptoms of Cancer: Cancer of Esophagus. B. E. Rhudy, Greensboro.—p. 341.
Id.: Cancer of Stomach. A. de T. Valk, Winston-Salem.—p. 342.
Id.: Cancer of Bowel and Rectum. H. L. Brockmann, High Point.—p. 343.
Id.: Cancer of Bladder. C. O. Delaney, Winston-Salem.—p. 345.
Id.: Cancer of Bone. R. A. Moore, Winston-Salem.—p. 347.
Id.: Cancer of Lung. W. J. Benton, Greensboro.—p. 348.
Id.: Cancer of Cervix and Uterus. M. S. Martin, Mount Airy.—p. 349.
Id.: Cancer of Breast. R. O. Lyday, Greensboro.—p. 351.
Diagnosis and Management of Latent Syphilis. J. L. Callaway, Durham, and G. M. Leiby, Raleigh.—p. 352.
Synthetic Estrogenic Hormone: Preliminary Report. J. W. Farthing, Wilmington.—p. 354.
David A. Stanton, M.D., F.A.C.S. F. R. Taylor, High Point.—p. 356.
Invagination of Appendix. A. Hinson, Rock Hills, S. C.—p. 358.

Pennsylvania Medical Journal, Harrisburg

43:1377-1520 (July) 1940

Correlation of Chronic Infection of Upper and Lower Respiratory Tracts. F. Smith, Grand Rapids, Mich.—p. 1389.
Abdominal Trauma. J. W. Levering, Abington.—p. 1398.
Important Aspects of Malignancies of Skin and Mucous Membranes. Patricia H. Drant, Philadelphia.—p. 1405.
Resuscitation of Newborn. R. J. Kressler, Philadelphia.—p. 1411.
Intra-Ocular Imbalance Indicative of Endocrine Deficiency. H. H. Turner, Pittsburgh.—p. 1413.
Diabetes: III. Significance of Dermatophytosis in Diabetes. H. T. Kelly, Philadelphia.—p. 1416.
Urologic Emergencies Due to Acute Infection. G. L. Armitage Jr., Chester.—p. 1418.
Traumatic Urologic Emergencies, with Special Reference to Urethra, Bladder and Kidney. E. J. McCague, Pittsburgh.—p. 1420.
Management of Acute Urinary Tract Obstructions. J. C. Birdsall, Philadelphia.—p. 1424.
Management of Uterine Displacements. R. W. Mohler, Philadelphia.—p. 1434.
Premature Infants. W. H. Crawford, G. B. Haber and R. J. Kressler, Philadelphia.—p. 1438.
Surgical Aspects of Diverticulitis. T. A. Shallow, Philadelphia.—p. 1443.
Mesenteric Cysts. F. L. Larkin, Uniontown.—p. 1446.
Rational Treatment of Acute Cholecystitis. J. N. Coombs, Philadelphia.—p. 1449.
*Vaginal Antisepsis and Puerperal Morbidity: Suggested Classification of Morbidity Based on Analysis of 5,140 Cases of Labor. C. E. Ziegler and B. R. Austin, Pittsburgh.—p. 1452.
Control of Contagious Diseases in Pediatric Wards of a General Hospital: Results of Two Year Trial. C. C. Fischer, Philadelphia.—p. 1457.
End Results of Carcinoma of Colon. G. Willauer, Philadelphia.—p. 1460.

Vaginal Antisepsis and Puerperal Morbidity.—Ziegler and Austin consider the vagina of a woman in labor as potentially infected in that it may contain pathogenic bacteria. According to them the so-called normally sterile vagina in the adult female does not exist. Constant drainage into the vagina from the cervix and easy and repeated contamination from without conspire to defeat the establishment and maintenance of vaginal asepsis. During labor infected contents of cervical glands are expressed into the birth canal by the ironing out processes of effacement and dilatation of the cervix. The obstetrician is the only surgeon who makes no attempt to sterilize his operative field—the vagina. If it is infected when labor

begins, the most perfect technic of preparation which does not include the vagina will not be sufficient to prevent puerperal infection in the presence of the abrasions, contusions and lacerations which commonly occur, and especially when the hands of the operator or the forceps blades are passed through an unprepared bacteria-laden vagina into the uterus. If antiseptics kill bacteria, decrease their numbers and attenuate their virulence there is no reason why they should not be used in the vagina as regularly as they are used elsewhere. During the last seven years vaginal antisepsis has been used as a matter of routine at the Elizabeth Steel Magee Hospital in about 17,000 cases of labor. It has been applied by means of the Kolpospray—an atomizer operated by compressed air with a pressure of about 35 pounds. The vagina is rapidly flooded and is thoroughly cleansed and flushed by the force of the spray. The secretions are mixed with the solution and blown out through the vents in the rear of the encasing tip as the escaping air under pressure returns unhindered to the atmosphere. The antiseptic used was a 1:2,500 solution of tincture of merthiolate. Each patient is sprayed at the beginning of labor and every eight hours thereafter until the completion of labor. Should the membranes rupture before labor begins, the spraying is done every twelve hours until labor begins. Vaginas are sprayed before each examination and before all operative procedures, including cesarean section, irrespective of when sprayed previously. When possible, an hour should elapse after spraying before operative procedures are undertaken. A spraying should be timed to follow complete effacement of the cervix when possible. If an enema is to be given, it must precede preparation and spraying. A comparison of 5,140 cases, 2,749 deliveries in 1932 before antisepsis was practiced and 2,391 deliveries in 1937 (the fifth year of its routine employment) shows that of the first group 45.47 per cent were afebrile, 39.32 per cent had fevers from 99.2 to 100.2 F. and 15.21 per cent had fevers higher than 100.4 F. The respective figures for the 1937 group were 48.47, 42.37 and 9.16 per cent. The last percentage includes 287 unsprayed vaginas. In the 1932 group there were eight deaths from peritonitis, nine from septicemia, five from hemorrhage, two from pulmonary complications, one from a cardiac ailment, seven from toxemia and four miscellaneous. The corresponding figures for the 1937 group were three, zero, four, four, two, zero and one. The authors state that vaginal antisepsis is an addition to and not a substitute for asepsis as practiced in every well conducted maternity. It will not lessen morbidity due to infection introduced from without during the puerperium.

Public Health Reports, Washington, D. C.

55:1193-1240 (July 5) 1940

*Studies in Childbirth Mortality: II. Age and Parity as Factors in Puerperal Fatality. J. Yerushalmy, C. E. Palmer and M. Kramer.—p. 1195.
Rapid Thick Film Blood Stain. L. Michelson and Aimee Wilcox.—p. 1221.
Lymphocytic Choriomeningitis: Gray Mice, Mus Musculus, a Reservoir for Infection. C. Armstrong, J. J. Wallace and L. Ross.—p. 1222.

55:1241-1294 (July 12) 1940

Development of National Maritime Quarantine System of the United States. B. C. Hampton.—p. 1241.
Studies on Dental Caries: IX. Prevalence and Incidence of Dental Caries Experience, Dental Care and Carious Defects Requiring Treatment in High School Children. H. Klein and C. E. Palmer.—p. 1258.
Study of Role of Ventilating Systems in Transmission of Bacteria. J. M. Dalla Valle and A. Hollaender.—p. 1268.
American Azures in Preparation of Satisfactory Giemsa Stains for Malaria Parasites. M. A. Roe, R. D. Lillie and A. Wilcox.—p. 1272.

Age and Parity as Factors in Puerperal Fatality.—Yerushalmy and his associates discuss the bearing of age and parity as factors in puerperal mortality. His study is based on the 258,525 infants born in New York State (exclusive of New York City) during 1936, 1937 and 1938. The maternal death certificate was matched with the birth or stillbirth certificate of the infant, and the death certificate of every infant who died within one month of birth was matched with its birth certificate. The risk to the mother associated with the delivery of an offspring of viable age is defined as "puerperal fatality." The author found that the puerperal fatality rate was high for mothers delivered of their first child (28.2 per 10,000 deliveries), lowest for the mothers of third births (18.5) and highest for mothers delivered of their eighth and ninth child (63.4). The rate for combined infant loss (late fetal and neonatal mortality) was also relatively high for first births (59.8 per thousand of total births), was at a minimum for second births (44.9) and increased thereafter with order of birth to a maximum (96.9) for births of the highest orders. The relative stillbirth rates by order of birth were similar to the relative puerperal fatality rates. The increase in puerperal fatality by order of birth embraces all causes of death. However, septicemia caused a smaller proportion of deaths among the higher orders of births, while toxemia was more frequent among first births and births of higher orders than among the intermediary births. Deaths from hemorrhage were less frequent among primiparas than among multiparas. The puerperal fatality increased with advancing parity among mothers whose infants survived the first month of life. More than 5 per cent of the deliveries terminated prematurely. The infant loss was eighteen times as high among the premature as among the full-term infants. Puerperal fatality was seven times as high when pregnancy terminated prematurely as when delivery was at term. The infant loss was relatively high among the youngest mothers, was lowest for mothers in their twenties and increased thereafter with the age of the mother. Puerperal fatality was at a minimum for the youngest mothers and increased sharply with advancing age. The puerperal fatality rate and the infant loss were independently related to the order of birth and the age of the mother. The puerperal fatality rate and the infant loss were relatively high when the father was young, low when the father was between 25 and 34 years of age and again high when the father was older. This variation is independent of the correlation between the ages of husband and wife. Similarly the variation in puerperal fatality by age of husband is not an expression of the relation between age of father and infant loss.

Quarterly J. of Studies on Alcohol, New Haven, Conn.

1:1-200 (June) 1940

High Proof of Liquor as Factor in Production of Alcoholism. Y. Henderson, New Haven, Conn.—p. 1.
Alcohol: Study of Social Ambivalence. A. Myerson, Boston.—p. 13.
Personality Factors in Alcoholic Addiction. N. D. C. Lewis, New York.—p. 21.
Influence of Alcohol on Digestive Tract: Review. J. M. Beazell and A. C. Ivy, Chicago.—p. 45.
Influence of Alcohol on Adequacy of B Vitamins in the American Diet. N. Jolliffe, New York.—p. 74.
Effects of Alcohol on Normal and Pathologic Kidney: Review. M. Bruger, New York.—p. 85.
Cirrhosis of Liver. C. L. Connor, San Francisco.—p. 95.
Activities of the Research Council on Problems of Alcohol.—p. 104.
Effects of Alcohol on Individual: Review of Literature of 1939. E. M. Jellinek and N. Jolliffe, New York.—p. 110.

Texas State Journal of Medicine, Fort Worth

36:207-276 (July) 1940

New Concepts of Etiology of Hemolytic Anemia and Their Relation to Diagnosis. W. D. Tigertt and J. M. Hill, Dallas.—p. 214.
Place of Vitamin K in Hemorrhagic Diseases. A. E. Greer, Houston.—p. 218.
Intravenous Use of Concentrated Plasma Prepared by Adtevac Process. J. M. Hill, Dallas.—p. 223.
*Crystalline Sulfanilamide in Compound Fractures. W. G. Stuck, E. A. Maxwell and R. N. O. Monsalvo, San Antonio.—p. 225.
Sulfanilamide: Its Mode of Action and Toxic and Untoward Effects. B. R. Collins, Wichita Falls.—p. 229.
*Sulfanilamide in Treatment of Undulant Fever. W. S. Horn, Fort Worth.—p. 232.
Foreign Bodies in Stomach Observed Through Gastroscope: Report of Five Cases. C. O. Patterson and M. O. Rouse, Dallas.—p. 238.
Chorio-Allantoic Membrane Infection as Diagnostic Test for Smallpox. S. W. Bohls and J. V. Irons, Austin.—p. 242.
The State Reservoir of Malaria Therapy. D. H. Lawrence and J. E. Sorell, Austin.—p. 246.
Socialized Medicine: Menace to Public Health. J. H. Page, Houston.—p. 251.

Crystalline Sulfanilamide in Compound Fractures.—Stuck and his co-workers report the use of crystalline sulfanilamide in twenty-six consecutive unselected cases of compound fractures. Twenty-one cases were fresh compound fractures seen shortly after the accident, and five were old compound frac-

tures in which chronic osteomyelitis had been present for many months. Primary union was obtained after operation in twenty-two. Osteomyelitis developed in two of the fresh cases (one a compound dislocation of the ankle, the other a badly macerated compound fracture of the tibia). Healing has not yet occurred in two of the old osteomyelitis cases. In contrast to the usual procedure all wounds were closed without drains and yet gas gangrene did not develop in any of the new cases. The local use of sulfanilamide does not in any way take the place of thorough cleansing and débridement of wounds. The administration of prophylactic antitetanus serum and antigas serum is likewise equally important. However, the authors believe that since the high local concentration of sulfanilamide seems to be specific against the gas-forming anaerobes and since antigas serum is not invariably effective it may be safe to omit its routine use. The prophylactic administration of roentgen therapy over compound wounds, which was a routine procedure, has been discontinued for they have complete confidence that gas gangrene will not develop in wounds treated with sulfanilamide. The oral prophylactic administration of sulfanilamide has been abandoned because they feel that high local concentrations of sulfanilamide are far more effective.

Sulfanilamide in Treatment of Undulant Fever.—Horn reviews twenty articles which report eighty-three cases of brucellosis treated with sulfanilamide or its derivatives. The daily dosage fluctuated from 1 to 6 Gm. and the total dosage from 7 to 72 Gm. The duration of treatment varied from thirty-six hours to twenty-three days and the reported results from failure to miraculous cures. However, a study of the compiled cases indicates a favorable influence on the subjective symptoms of the disease in the ratio of 2:1. This same ratio was elicited by the author in fifty-four cases treated with sulfanilamide or its derivatives. The toxic side effects were no different from those seen from its use in other conditions. Only two of the cases were acute. In one of these sulfanilamide has been given the credit for a cure on 40 grains (2.6 Gm.) daily for seventeen days, while the other patient failed to respond and died eight months later although she was given three additional courses of the drug. In the fifty-two chronic cases sulfanilamide was voted of value although a number of times the brucella organism was recovered from the feces after varying dosage and periods of sulfanilamide therapy. Small doses (2.3 Gm. daily) over a period of twenty-five days in the chronic cases seem to have a favorable effect. The courses are repeated every other month. Improvement appeared to be more consistent and more effective after the second than after the first course of treatment. The author believes that the provocative influence of sulfanilamide on the opsonocytophagic index is of valuable diagnostic importance. Likewise he is convinced that it stimulates phagocytic protection and otherwise favorably influences the course of the disease in a satisfying majority of cases. He believes that the regular and consistent use of specific vaccine during and following sulfanilamide therapy is important; the one appears to complement the other.

Yale Journal of Biology and Medicine, New Haven

12:605-750 (July) 1940

"A Journal, of a Young Man of Massachusetts, . . . Written by Himself." Boston: 1816, and a Note on the Author. H. R. Viets, New Haven, Conn.—p. 605.
Studies on Relation of Kidney to Cardiovascular Disease. M. C. Winternitz, E. Mylon, L. L. Waters and R. Katzenstein, New Haven, Conn.—p. 623.
Observations on Absorption, Excretion, Diffusion and Acetylation of Sulfathiazole in Man. J. F. Sadusk Jr., F. G. Blake and Anne Seymour, New Haven, Conn.—p. 681.
The Disinfection Concentration Exponent. P. B. Cowles, New Haven, Conn.—p. 697.
Effect of Hypophysectomy on Compensatory Renal Hypertrophy In Dogs. M. C. Winternitz and L. L. Waters, New Haven, Conn.—p. 705.
Electrometric Studies of Tumors Induced in Mice by External Application of Benzpyrene. H. S. Burr, G. M. Smith and L. C. Strong, New Haven, Conn.—p. 711.
Cortical Representation of Taste in Man and Monkey: I. Functional and Anatomic Relations of Taste, Olfaction and Somatic Sensibility. W. S. Börnstein, New Haven, Conn.—p. 719.
The Queckenstedt Test: Consideration of Method of Application and Nursing Problems Related to It. O. Turner and Virginia C. Byrne, New Haven, Conn.—p. 737.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

24:317-372 (July) 1940

Relationship Between Chronic Iridocyclitis and Tuberculosis, and Appropriate Therapy. W. D. W. Brooks, F. A. Juler and E. R. Williams.—p. 317.

British Journal of Radiology, London

13:221-256 (July) 1940

Irradiation of Liquids. F. L. Hopwood.—p. 221.
X-Ray Cinematography in Research. A. E. Barclay, K. J. Franklin and M. M. L. Prichard.—p. 227.
Energy Absorption. W. V. Mayneord.—p. 235.
Neutron Emission from Generator Operating at 300 Kilovolts. L. H. Gray and J. Read.—p. 248.
Portable "Back-Scatter Phantom" for X-Ray Measurements. F. Happey.—p. 254.

British Medical Journal London

1:1043-1076 (June 29) 1940

Volume and Rate in Blood Transfusion for Relief of Anemia. J. L. Marriott and A. Kekwick.—p. 1043.
Plasma Transfusions in Treatment of Hemorrhage. H. J. Brennan.—p. 1047.
Delayed Traumatic Intracerebral Hemorrhage. C. P. Symonds.—p. 1048.
Anastomosis Tubes for Resection of Colon. N. C. Lake.—p. 1052.
Volkmann's Ischemia: Observations at Open Operation. E. B. Jones.—p. 1053.
Occlusion of Brachial Artery and Volkmann's Ischemic Contracture. L. W. Plewes.—p. 1054.

Edinburgh Medical Journal

47:441-512 (July) 1940

*Studies on Stored Blood: I. Results in Series of 427 Transfusions. C. P. Stewart.—p. 441.
Effort Syndrome in the Present War. F. R. Fraser.—p. 451.
Some Aspects of Streptococcic Infection: Review. T. J. Mackie.—p. 466.
Follicular Lymphoblastoma: Two Cases. R. Salm.—p. 486.

Results in 427 Stored Blood Transfusions.—Stewart reports on 427 transfusions with blood stored for from an hour or two to thirty days. At first no attempt was made to use relatively fresh blood in cases in which it is now believed to be essential. The results in such cases tended to be disappointing. In the surgical cases the results appeared to be independent of the "age" of the blood. In such conditions as leukemia, various types of anemia, septicemia, toxemia and the like, blood is now used which has been in store for as short a time as possible, and the results have, by the same criteria, greatly improved. In fact, fresh blood appears to possess little if any superiority. With the stabilization of conditions it has become possible to keep in store the large stock of blood, not more than two or three days old, necessary for war emergencies. It was found that blood stored for not more than fourteen days does not increase the reaction incidence and that with blood stored for from five to ten days the incidence may be reduced. However in an emergency it would be justifiable to use blood stored for more than fourteen days for cases of severe acute hemorrhage. There were fifty-eight reactions. Among the 259 transfusions performed since January 1940 there were twenty-seven reactions. Stored blood should not be used indiscriminately. Certain patients should receive blood not more than two days old, as by that time a considerable proportion of the viable leukocytes has disappeared. In these cases the necessity for providing leukocytes outweighs the lessened reaction incidence obtainable with blood stored for from five to ten days. Older blood seems to be suitable when the object of the transfusion is to supply fluid and oxygen-carrying power. The advantages of a blood store are greatest only if blood is withdrawn so frequently that almost fresh blood is always available. Many cases requiring fresh blood are not emergencies, and transfusions for them can usually be arranged on the day when blood is being withdrawn for the store. In this way practically "direct" transfusions can be given and the inconvenience to donors minimized.

Lancet, London

1:1149-1184 (June 29) 1940

*Synthetic Vitamin K in Treatment of Hypoprothrombinemia. R. Kark and A. W. Souter.—p. 1149.
Stomach Ache. A. J. C. Latchmore.—p. 1153.
Air-Borne Streptococcic Infection Following Influenza. R. Cruickshank and C. Muir.—p. 1155.
*Sulfamethylthiazole in Experimental Staphylococcic Infections. A. Macdonald.—p. 1157.
The Sedimentation Index. G. Day.—p. 1160.

Synthetic Vitamin K in Hypoprothrombinemia.—Kark and Souter studied the vitamin K activity of a water-soluble derivative of 2-methyl-1, 4 naphthoquinone, administered intravenously or intramuscularly to eighteen patients with hypoprothrombinemia. The conditions in the patients were various but hypoprothrombinemia was a feature. There was a rapid rise in blood prothrombin concentration in nine cases after the administration of the compound. No toxic effects were observed. In most of these cases a relapse followed the discontinuance of therapy, and the blood prothrombin concentrations were again restored to normal by further treatment. In three cases there was active bleeding before treatment was begun. This was controlled within a few hours after its initiation. Discussing the cases that failed to respond to treatment, the authors state that whereas some patients with severe hepatic damage are apparently completely unable to produce prothrombin, others with most severe or most chronic hepatic disease produce prothrombin, but in quantities insufficient to maintain a normal level. The failure of response to the parenteral administration of vitamin K in these two groups of patients may be of some prognostic importance when considered along with the level at which the blood prothrombin concentration is maintained. All the patients of the first type died. The authors think it probable that in the future vitamin K or one of its analogues will be given as a routine before operation to patients suspected of having hypoprothrombinemia. However, such administration is not a guaranty that the blood prothrombin concentration will be raised to within normal limits. If the prothrombin level is low in spite of such treatment, blood transfusion is the only known therapeutic measure which can increase the prothrombin concentration.

Sulfamethylthiazole in Staphylococcic Infections.—Macdonald found that about half of the mice infected with staphylococci by the intraperitoneal or intravenous route and treated with sulfapyridine or sulfamethylthiazole lived for twenty-one days. Many of the mice surviving this length of time harbored the infecting organism and some still had abscesses in the kidneys. Treatment for only fifteen days may not have been sufficient, but it is fairly characteristic of the sulfonamide drugs that when they act they do so quickly. Some of the results obtained compare unfavorably with those of several experienced workers. It seems that both sulfapyridine and sulfamethylthiazole prevented many of the early deaths in staphylococcic infections of mice, and it is probable that both drugs are less efficient after abscesses have begun to form. None of the sulfonamide drugs are particularly active in the presence of pus, and the experiments with cutaneous abscesses may indicate that sulfamethylthiazole does not completely overcome this difficulty. There is little evidence that sulfamethylthiazole is as specific for staphylococcic infections as other sulfonamide compounds are for pneumococcic or for streptococcic infections.

Practitioner London

145:1-84 (July) 1940

Pyelitis. T. H. Oliver.—p. 1.
Disturbances of Micturition in Old Age. C. Morson.—p. 9.
Tuberculosis of the Kidney. F. K. Smith.—p. 15.
Practical Points in Diagnosis and Treatment of Renal Tumors. T. Millin.—p. 25.
Enuresis in Children. C. T. Potter.—p. 33.
Head Injuries. D. W. C. Northfield.—p. 41.
Dysentery and Enteric Fever as Medical Emergencies of War. R. L. H. Minchin.—p. 54.
Use of Vitamin D Preparations in Prevention and Treatment of Rickets. Cecile Asher.—p. 61.
Modern Therapeutics: XIII. Mercury in Therapeutics. A. D. MacDonald.—p. 66.

Schweizerische medizinische Wochenschrift, Basel

70:577-616 (June 22) 1940. **Partial Index**

Connections Between Chemical Constitution and Pharmacotherapeutic Action of Cardiac Glucosides. E. Rothlin.—p. 577.
Glands with Neurocrine Function in Brain. G. Roussy and M. Mosinger.—p. 581.
Casuistics of Gaucher's Disease. E. Ruppanner.—p. 584.
*Surgical Treatment of Hypoglycemic Conditions Caused by Langerhansian Adenomas. F. Sauerbruch.—p. 587.
*Pathogenesis of Nonrenal Hypertension. R. Siebeck.—p. 589.
Disorders of Costal Cartilages as Cause of Pain in Chest. R. Staehelin.—p. 592.
Importance of Purification of Natural Active Principles, Especially of the Digitalis Glucosides for Therapy. A. Stoll.—p. 594.
New Conceptions of Medical Application of Vitamins. A. Szent-Györgyi.—p. 596.
Engorged Liver and Its Functional Disturbances. C. Wegelin.—p. 597.
Syntopan (Phosphate of 3-Diethylamino-2,2-Dimethyl Propylester of Tropic Acid) a Valuable Aid in Expulsion of Ureteral Calculi. H. Wildbolz.—p. 599.
*Possibilities and Prospects of Suction Drainage of Pulmonary Cavities According to Monaldi. J. E. Wolf.—p. 600.

Surgery for Hypoglycemia Caused by Adenomas of Islands of Langerhans.—Sauerbruch credits American investigators with having recognized in recent years a form of paroxysmal spontaneous hypoglycemia caused by hyperfunctioning of a benign pancreatic adenoma. Removal of the tumor effects a cure. The clinical picture begins with a sensation of hunger, fatigue and faintness. The patient feels weak in the knees and collapses; there are apathy, loss of orientation, stupor and somnolence. General or localized spasms may appear. The pupils become dilated and lose their reactivity. There may be foaming at the mouth and biting of the tongue or lips. As a rule there are labored respiration, rapid pulse and increased blood pressure. Symptoms resemble those of an epileptic attack. The patients after awakening fail to recollect the event. They recover within a few minutes if given sugar solution to drink; the recovery is even more rapid after intravenous injection of dextrose. The diagnosis of such an attack is usually one of epilepsy or brain tumor. Such was the experience of the author in three cases. The true nature of the condition was not recognized until repeated determinations of the sugar content of the lumbar punctate and of the blood had been made. An additional important sign of a pancreatic adenoma is the time of the appearance of the attacks. They generally appear in the morning, when the patient is still fasting, when he is hungry or after exertions or excitations; that is, always when the blood sugar level is physiologically low. Early operation is advisable. The detection of a tumor the size of a cherry stone or a cherry may be difficult. Frequently it can only be felt and in such a case splitting of the cortical layer is necessary. The pancreas is best exposed through the gastrocolic ligament. The author gives detailed clinical histories of two patients with hypoglycemia in whom recovery followed the removal of a langerhansian adenoma. The first patient was a girl aged 7, the second a woman aged 50. The author cites two more investigators who have each reported a recent case cured by extirpation of an insuloma.

Pathogenesis of Nonrenal Hypertension.—According to Siebeck it is now generally recognized that there are many disorders associated with temporary or permanent increase in blood pressure not caused by morbid changes in the kidneys. The differentiation of the renal from the nonrenal form of hypertension is often quite difficult, because it frequently depends on a history which is not reliable. The two forms differ in significance. In every severe chronic nephritis there exists the danger of gradual renal decay which finally results in renal insufficiency. In nonrenal hypertension, however, renal degeneration is rare, circulatory failure and cerebral disturbances being much more frequent complications. Investigations demonstrated that in the event of insufficient blood perfusion of the kidneys there develop "pressor substances" which circulate in the blood and produce a general vasoconstriction. Apparently they can be differentiated from other nonrenal pressor substances, such as were demonstrated by Marx in other forms of hypertension and in epilepsy. At the onset of acute nephritis the blood pressure is not dependent on the kidney. In scarlet fever, for example, hypertension often precedes the symptoms of nephritis. Moreover, the blood pressure may increase before pressor substances

appear in the blood. In chronic nephritis there is often no relationship between the degree of renal damage and the height of the blood pressure. Furthermore, it is known that in the later stages of nonrenal hypertension the kidneys may become involved. Nevertheless the etiology of nonrenal hypertension is not entirely obscure. The significance of the hereditary factor is no longer disputed and the fact that the nonrenal hypertension increases with age is also evident. The author observed repeatedly that hypertension may develop after acute infections even if there is no nephritis. He thinks that hereditary predisposition and damage caused by misuse of tobacco, restlessness and increased physical and psychic tension may also play their part, but he regards the role of infections as most important in the genesis of the nonrenal "essential" hypertension. For this reason infections, particularly chronic foci of infection, should be searched for and treated. If the hypertension has already become chronic the prospect of a cure or improvement is slight. Early treatment, therefore, is essential. Other methods of treatment should not be neglected. In view of the constitutional character of the disease, medicinal treatment is of value only to counteract temporary complaints and complications. A suitable regulation of the mode of life is of chief importance. There should be proper rest and relaxation, suitable arrangement of the daily tasks, calm acceptance of the tribulations of life, restriction of salt in the diet and liberal quantities of fruits and fruit juices, abstinence from tobacco and moderation in the consumption of wine and beer.

Monaldi's Suction Drainage of Pulmonary Cavities.—Wolf calls attention to Monaldi's method of suction drainage of tuberculous cavities of the lung. Monaldi succeeded in reducing and gradually closing tuberculous cavities by permanent conversion of the positive internal pressure into a negative one by means of suction drainage (introduction of a rubber catheter through the thoracic wall into the pulmonary cavity). Roentgenologic and anatomic observations proved that the atelectatic zones surrounding the cavities actually expand as a result of the negative pressure. Relatively recent cavernous processes have better prospects of cure than old cavities with rigid walls, but even cavities with rigid walls can be obliterated by the suction treatment. The chief indication for suction drainage is giant cavities which do not readily yield to the various collapse methods. Even extensive thoracoplasty often fails to produce a complete collapse of these giant cavities and the possibility of dissemination presents a constant danger for the patient. If the Monaldi method does not effect a complete cure, it at least reduces the size of the cavity and makes it amenable to operative intervention. Residual cavities which have undergone plastic operations can likewise be subjected to suction drainage. The author observed a surprising improvement in the subjective and objective condition of his patients as the immediate effect of suction drainage. Attacks of coughing ceased soon after the introduction of the catheter and toxic symptoms gradually decreased in the course of the following days and weeks. The temperature of febrile patients was reduced and this was accompanied by improvement in the general condition and in the appetite. The quantity of sputum decreased in all cases, and sputum retention, so frequent in giant cavities, did not occur. Better drainage brings about detoxication and rapid disappearance of toxic symptoms. Heart action improves and night sweats disappear.

Dia Medico, Buenos Aires

12:597-620 (July 8) 1940. **Partial Index**

Endarteritis Obliterans of Lower Extremities. C. A. Leoni Iparraguirre.—p. 597.
*Ascorbic Acid in Treatment of Vomiting of Pregnancy. D. Taylor Gorostiaga.—p. 612.

Ascorbic Acid Therapy of Vomiting of Pregnancy.—Taylor Gorostiaga made observations on the behavior of ascorbic acid in normal pregnancy and pregnancy complicated by vomiting or toxemia. The experiments involved thirty women in the course of early pregnancy and ten normal women. Demole's test for saturation of ascorbic acid in the body was used. The test consists of making a preliminary quantitative determination of the elimination of ascorbic acid in the urine, and administration to patients of ascorbic acid by mouth in daily doses of 300 mg. up to the appearance of ascorbic acid in the urine in the amount of about 5 mg. per hundred cubic centimeters of urine. This amount represents normal saturation of the body with ascorbic acid. The acuteness of organic deficiency of the substance is evaluated from the storage of ascorbic acid in the body, before appearance of the aforementioned approximate amount of the acid in the urine. The author found that a physiologic deficiency of from 600 to 900 mg. of ascorbic acid may exist in normal women. The deficiency reaches figures of about 1,200 mg. in normal pregnancy and of higher figures in gestosis and vomiting. Either condition is controlled by ascorbic acid treatment when hypovitaminosis C is present, except when neuropathic or other disorders predominate. The treatment consists of administration of ascorbic acid by mouth up to normal ascorbic acid saturation as shown by the elimination of about 5 mg. of the acid per hundred cubic centimeters of urine. Thereafter the saturation is maintained by administering 100 mg. of the acid daily.

Sovetskaya Meditsina, Moscow

Pp. 1-56 (No. 7) 1940. **Partial Index**

Basic Pathologic Characteristics of Bacillary Dysentery. Y. M. Lazovskiy.—p. 7.
Problems in Combatting Dysentery of Childhood. S. O. Dulitskiy.—p. 10.
Morphologic and Biochemical Characters of Feces in Dyspepsia and Dysentery. A. V. Vishuyakov.—p. 18.
*Effectiveness of Specific Virus Vaccine Therapy in Grip by Inhalation. A. V. Nechaev.—p. 25.

Inhalation of Virus Vaccine for Grip.—Nechaev reports the results obtained with inhalation of antigrip virus vaccine as observed in a group of 437 cases of epidemic grip and 198 cases of sporadic grip. The vaccine is prepared by sending a current of air into a specially constructed glass container which reduces the vaccine to the consistency of a mist, which is then inhaled by the patient through a sort of a gas mask tube. The duration of inhalation amounted to from twenty to thirty minutes and the amount of virus vaccine inhaled to from 1.5 to 3 cc. As a rule, one inhalation constituted the sole treatment. A few patients were given two. The patients were divided into equal groups, one being treated with the virus vaccine inhalation, the other, serving as a control, being treated with the usual drugs such as the salicylates, methenamine and calcium. Sixty patients were treated by the inhalation on the first day of the illness and the results were compared with a corresponding group treated with salicylates. Forty-five patients received the inhalation therapy on the second day and a corresponding group was treated medicinally on the second day. A third group consisting of thirty-five patients was treated with inhalation on the third day of the disease and a corresponding group was treated medicinally. The comparison of the results obtained demonstrated the effectiveness of vaccine inhalation therapy in lowering the temperature and in combating symptoms of intoxication characteristic of epidemic grip. The vaccine treatment was particularly effective when applied on the first or second day of the disease. The vaccine when applied during the first two days was likewise effective in aborting the lesions of the mucous surfaces of the nasopharynx and the upper respiratory tract. When administered on the third day of the disease the results were no better than in the control group. The virus vaccine inhalation therapy applied during the first three days of the disease proved to be a valuable prophylactic measure against complications of grip. The author emphasizes a marked diminution in the incidence of pneumonia, otitis, sinusitis and angina as compared with the control group. Recurrences were entirely absent. Of 140 patients treated in the course of 1939 with the vaccine there was not a single instance of pneumonia, whereas there were forty-three instances of pneumonia in the group of 297 cases in a control group. Analogous results were noted during the epidemic of 1938; of 122 cases treated by vaccine inhalation there was not a single instance of pneumonia, whereas there were twenty-six instances of pneumonia among 280 control cases. The virus vaccine inhalation therapy was disappointing in sporadic grip both with regard to the uncomplicated cases and with regard to prevention of complications.